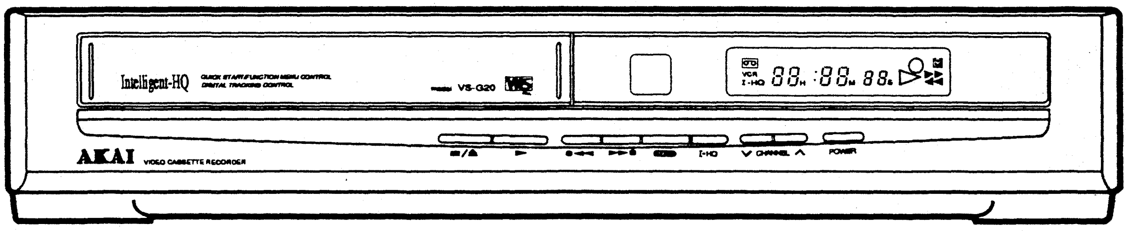
# AKAI SERVICE MANUAL


Intelligent-HQ
QUICK START/FUNCTION MENU CONTROL
DIGITAL TRACKING CONTROL
VS-G20
AKAI VIDEO CASSETTE RECORDER
I-HQ
CHANNEL
POWER

MODEL VS-G20EK

HQ HIGH QUALITY
VHS PAL
VIDEO Plus+

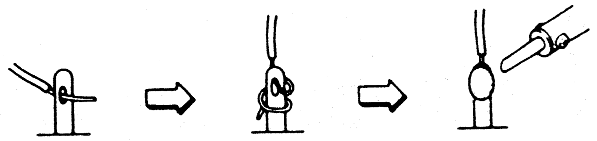
VIDEO CASSETTE RECORDER

MODEL VS-G20 EDG/EK/EM/EO/EOH
MODEL VS-G21 EOH
MODEL VS-G23 EOH
MODEL VS-G24 EK/EOG
MODEL VS-G25 EOG-V

# ★SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.

The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M ohms.

## MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can. Please leave them at an appropriate depot.

# ★ SPECIFICATIONS

| | |
|---|---|
| Format | |
| EK | VHS standard |
| EDG/EM/EO/EOH/ EOG/EOG-V | VHS standard (PAL, MESECAM) |
| Video recording system | Rotary, slant azimuth two-head helical scan system |
| Rotary heads | 2 video heads |
| RF input | |
| EDG | System D, K<br>VHF ch1 - 12, UHF ch 21 - 69<br>System B, G<br>VHF ch 2 -12, UHF ch 21 - 69<br>Cable ch S1'- S3', S1 - S20 |
| EK | System I, UHF ch 21 - 69 |
| EM | System B, G (PAL, SECAM)<br>VHF ch 2 -12, UHF ch 21 - 69 |
| EO | System B, G (PAL, SECAM)<br>VHF ch 2 - 4, 5 - 12<br>UHF ch 21 - 69<br>Cable ch S1' -S3', S1 - S20 |
| EOH/EOG/EOG-V | System B, G (PAL, SECAM)<br>VHF ch 2 - 4, 5 - 12<br>UHF ch 21 - 69<br>Cable ch S1' - S3', S1 - S41 |
| RF output | |
| EDG | System K/G type modulation<br>UHF ch 30 - 39 adjustable (preset ch 36) |
| EM | System B type modulation<br>VHF ch 3, 4 switchable (preset ch 4) |
| EK | System I type modulation<br>UHF ch 30 - 39 adjustable (preset ch 36) |
| EO/EOH/EOG/EOG-V | System G type modulation<br>UHF ch 30 - 39 adjustable (preset ch 36) |
| Recording (line input) | |
| EK | PAL |
| EDG/EM/EO/EOH/ EOG/EOG-V/ | PAL, SECAM (recorded as MESECAM) |
| Playback (line output) | |
| EK | PAL |
| EDG/EO/EOH/ EOG/EOG-V | PAL, SECAM (MESECAM Tape) |
| EM | PAL, SECAM (MESECAM tape)<br>NTSC 4.43 (NTSC tape)<br>Simulated PAL (NTSC tape playback only) |

| | |
|---|---|
| Video | |
| Line input level | 0.5 - 2.0 Vp-p/75 ohms unbalanced |
| Line output level | 1.0 Vp-p/75 ohms, unbalanced |
| S/N ratio | More than 45dB |
| Horizontal resolution | More than 250 lines |
| Audio | |
| Line input level | −6 dBs/50 k ohms, unbalanced |
| Line output level | −6 dBs/1 k ohms, unbalanced |
| S/N ratio | More than 40 dB |
| Frequency response | 70 - 10,000 Hz |
| Recording/playback time | 240 min. with E-240 cassette |
| NTSC playback (EM) | 160 min. with T-160 cassette |
| Tape speed | 23.39 mm/sec. |
| NTSC playback (EM) | 33.35 mm/sec. |
| Quick finder | Approx. 9 times normal speed |
| NTSC playback (EM) | Approx. 7 times normal speed |
| FF, REW time | Approx. 5 min. with E-180 cassette |
| Timer | 8 programmes /1 year |
| Clock reference | Quartz crystal |
| Display | TV screen & FL (Tape counter, Timer etc.) |
| Power requirements | |
| EK | 240 V AC, 50 Hz |
| EDG | 220 V AC, 50 Hz |
| EM | 110 -127 / 220 - 240 V AC 50/60 Hz |
| EO/EOH/EOG/EOG-V | 220 - 230 V AC, 50 Hz |
| Power consumption | |
| EK/EM | 36 W |
| EDG/EO/EOG | 37 W |
| EOH/EOG-V | 38 W |
| Operating temperature | 5°C - 40°C |
| Dimensions | |
| G20EDG/EM/EOH<br>G21EOH | 425(W) x 82(H) x 314(D) mm |
| G20EK/EO, G23EOH<br>G24EK/EOG<br>G25EOG-V | 426(W) x 82(H) x 313(D) mm |
| Weight | 5.0 kg |

**Standard accessories**

| | | |
|---|---|---|
| Antenna cable | 1 | |
| Remote control unit | 1 | |
| Batteries for remote control | 2 | |
| Operator's manual | 1 | |
| AC plug adaptor(S-16115) | 1 | [VS-G20EM (Y7) only] |

0 dBs = 0.775 V

* For improvement purposes, specifications and design are subject to change without notice.
* VIDEO PLUS AND PLUSCODE ARE TRADEMARKS OF GEMSTAR DEVELOPMENT CORP. VIDEO PLUS SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

# ★ INFORMATION

## SYMBOLS OF MODEL NAMES FOR PRIMARY DESTINATION

The symbols below indicate the destination of each unit.

| Symbol | Power Classification | Principal Destination | TV System | |
|---|---|---|---|---|
| | | | Color | Broadcast |
| EA | S | Australia | PAL | B,G |
| ED | E | China | PAL | D |
| EDG | E | East Europe | PAL | D,K |
| EDI | E | China, Hong Kong | PAL | D,K, I |
| EG | E | Spain, Nothern Europe, Other | PAL | B,G |
| | Y7 | Saudi Arabia | | |
| EK | B | U.K | PAL | I |
| | Y1 | Hong Kong | | |
| EM | E | Middle East | PAL | B,G |
| | Y7 | Saudi Arabia | | |
| EO | E | Holland, Switzerland, Nothern Europe | PAL | B,G |
| | V | Italy | | |
| EOH | E | Holland, Belgium | PAL | B,G |
| | V | Italy | | |
| EOG | V | Germany | PAL | B,G |
| ES | E | South Africa, Ireland, Hong kong | PAL | I |
| EV | E | South-East Asia | PAL | B,G |
| | U | Middle East, South -East Asia | | |
| | Y1 | New Zealand | | |
| | Y7 | Saudi Arabia | | |
| EZ | S | New Zealand | PAL | B,G |
| EGN | E | Middle East | PAL,NTSC | B,G |
| | Y7 | Saudi Arabia | | |
| S | E | France | SECAM | L |
| SK | E | Latin America, Oceania, SECAM-OIRT | SECAM | K,K1 |
| SEG | E | France, Switzerland | SECAM, PAL | L,B,G |
| U | A | U.S.A | NTSC | M |
| | C | Canada | | |
| UM | U | Latin America | NTSC | M |
| J | J | Japan | NTSC | M |

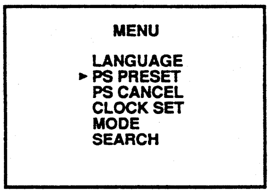
## MULTI-FUNCTION MENU MODE

This is an on-screen display of the various modes you can programme via the TV screen.

| | |
|---|---|
| LANGUAGE | : To select a language for the on-screen displays. |
| PS PRESET | : To preset TV stations. |
| PS CANCEL | : To cancel preset TV stations. |
| CLOCK SET | : To set the clock. |
| MODE | : To select the BLANK SKIP PLAY, AV MUTE, ON SCREEN DISPLAY and VIDEO SYSTEM modes (VIDEO SYSTEM selection is not available on some models). |
| SEARCH | : To select the BLANK SEARCH and INTRO SCAN modes. |

If necessary, refer to the respective sections in the operator's manual for detailed information.

1. Press the "MENU" button on the remote control unit.
   The menu list screen will be displayed on the TV screen.
   The arrow indicator is automatically set to the "CLOCK SET" position (if the clock has been set already, arrow indicator will be set to the "MODE" position).



**MENU**

**LANGUAGE**
**▸ PS PRESET**
**PS CANCEL**
**CLOCK SET**
**MODE**
**SEARCH**

2. Select the desired mode by setting the arrow indicator to the appropriate position with cursor "∧" button.
   The arrow indicator moves upwards each time the button is pressed. Pressing the cursor "∨" button will move the arrow indicator downwards.

3. Press the "OK" button.
   The selected function screen will be displayed on the TV screen.

∗ Press the "MENU" button again to return to the normal screen.

## MANUAL TRACKING/PICTURE/STABILITY ADJUSTMENT

The VCR can be adjusted for tracking and picture sharpness anytime it is in the playback mode with the remote control unit.

- **Manual tracking control**
  Press the "<" or ">" cursor botton repeatedly until the picture is clear. During manual tracking adjustment, the tracking position is shown on the TV screen, this will disappear automatically after adjustment has been completed. Use this function when performing the A/C HEAD phase adjustment.

- **Picture sharpness control**
  Press the "∧" button repeatedly to sharpen the picture or press the "∨" button to soften the picture.

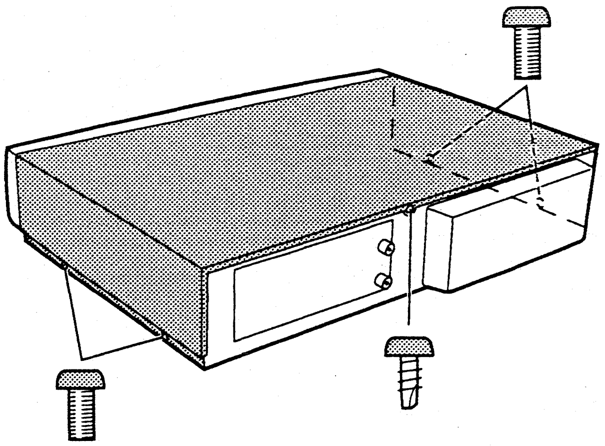
- **Stability adjustment**

1) To correct picture shake during the slow motion or still mode:
   Press "∧" or "∨" cursor button until the picture shake is corrected.
2) To correct tracking during the still mode:
   Press the "<" or ">" cursor button repeatedly until the picture is clear.

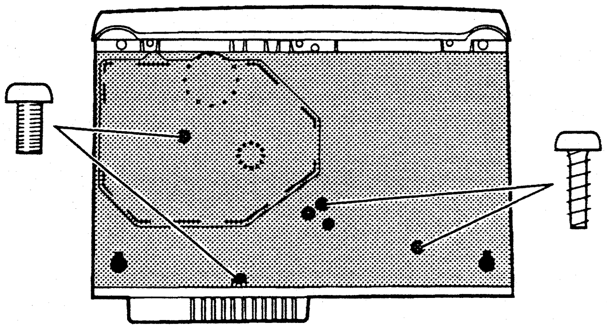
# I. DISASSEMBLY

In case of trouble,etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

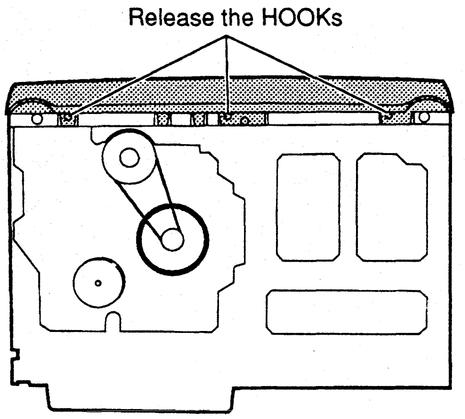
1. Removal of UPPER COVER

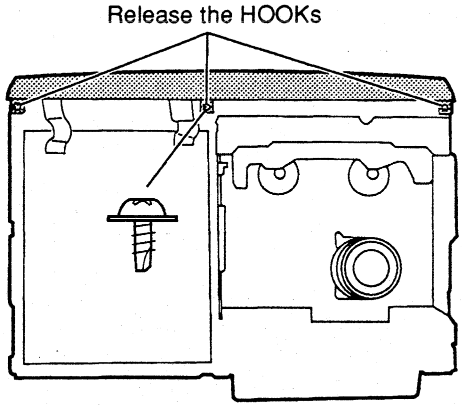


2. Removal of BOTTOM COVER

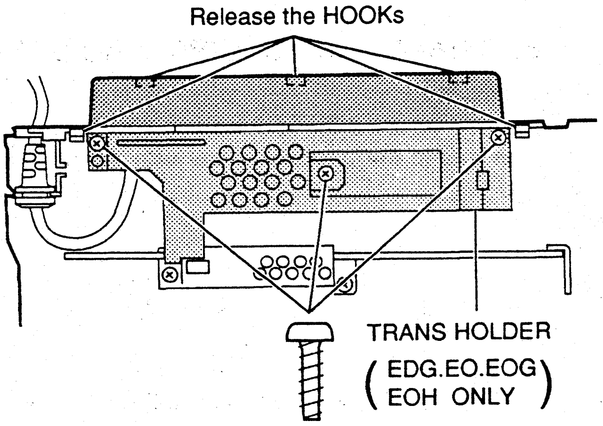


3. Removal of FRONT PANEL


Release the HOOKs


Release the HOOKs

4. Removal of TRANS COVER


Release the HOOKs
TRANS HOLDER
(EDG.EO.EOG
EOH ONLY)

# II. PRINCIPAL PARTS LOCATION

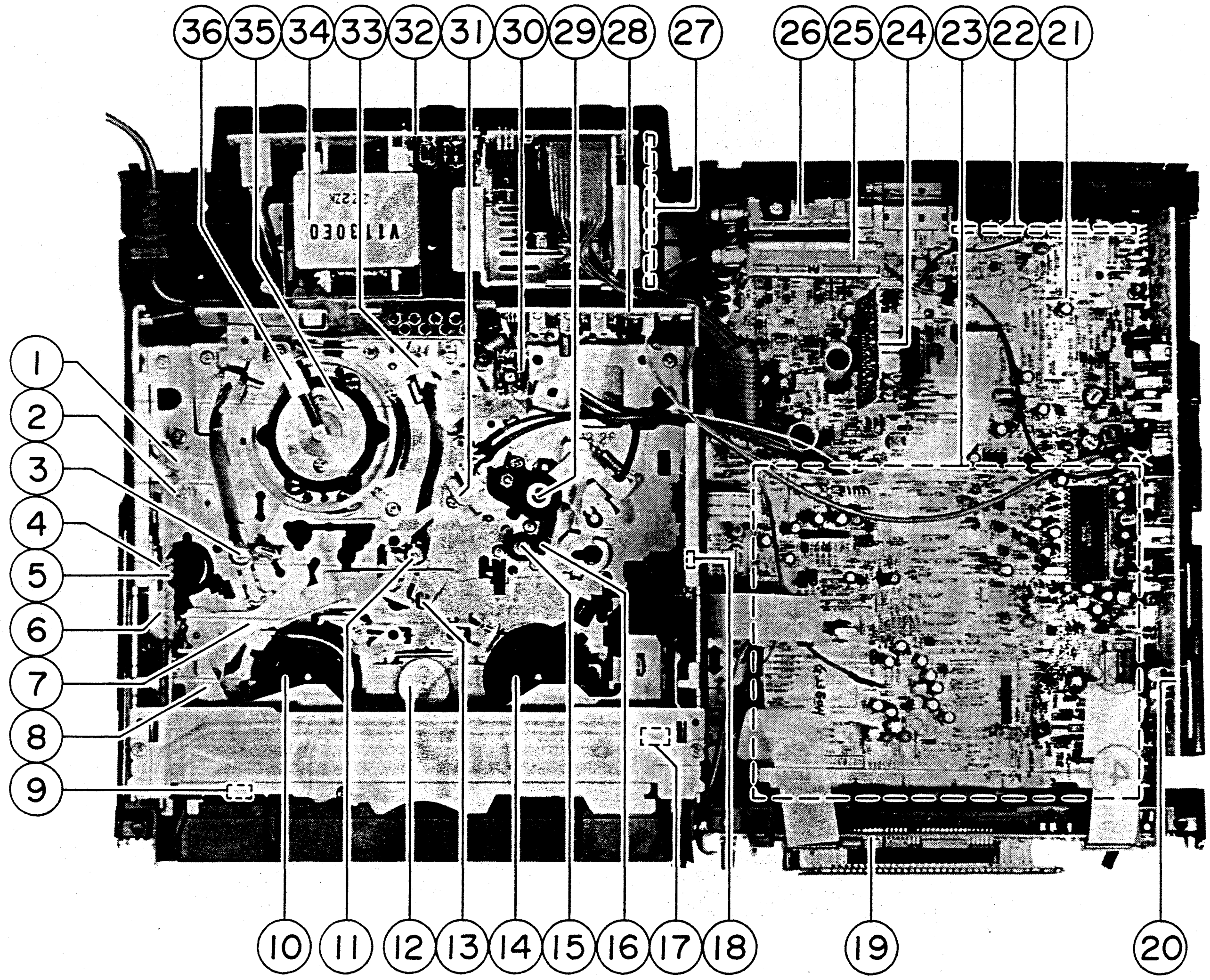


Fig. 2-1 Top view

1. FULL TRACK ERASE HEAD
2. SUPPLY TAPE GUIDE
3. SUPPLY LOADING LEADER
4. SENSOR (S) PCB (END SENSOR)
5. FRONT LOADING GEAR
6. FRONT LOADING SLIDER
7. TENSION ARM BLOCK
8. CASSETTE LOAD BLK
9. REC SAFETY SWITCH
10. SUPPLY REEL TABLE
11. TAKE UP LOADING LEADER
12. IDLER PART
13. SENSOR LED
14. TAKE UP REEL TABLE
15. CAPSTAN MOTOR
16. REVIEW ARM PART
17. S-VHS TAPE DETECT SWITCH
18. SENSOR (T) (START SENSOR)
19. OPERATION (B) PCB
20. MAIN (B) PCB
21. MAIN (A) PCB
22. SUB PCB (EM only)
23. VPS PCB (EOG only)
    VPST/PDC PCB (EOG-V only)
24. VIF UNIT
25. TUNER UNIT
26. RF CONVERTOR UNIT
27. POWER SUPPLY (2) PCB (EM, EOG-V only)
28. PRE AMP PCB
29. PINCH ROLLER BLOCK
30. DIODE PCB (EM, EO, EOG, EOH only)
31. AUDIO/CONTROL/S.ERASE HEAD
32. POWER SUPPLY (1) PCB (EM, EOG-V only)
    POWER SUPPLY PCB (except EM, EOG-V)
33. HEAD CLEANER BLOCK
34. POWER TRANSFORMER
35. VIDEO HEAD DRUM BLOCK
36. EARTH BRUSH PART

* Photograph employed on this page is of model VS-G23EOH

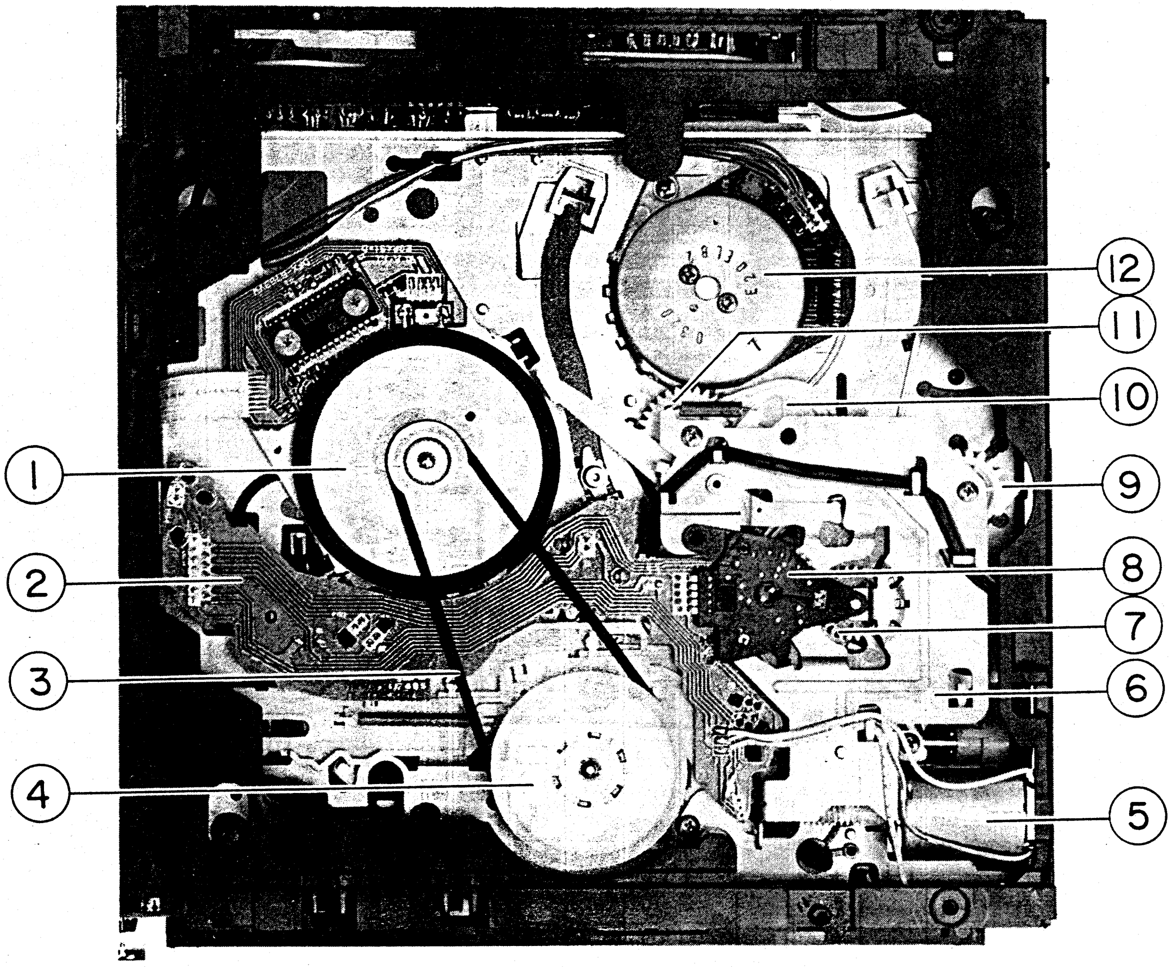


Fig. 2-2 Bottom view

1. CAPSTAN MOTOR BLOCK
2. SENSOR PCB
3. CAPSTAN BELT
4. CLUTCH DISK PART
5. LOADING MOTOR
6. LOADING DRIVE BLOCK
7. CAM SLIDER GEAR
8. MODE SELECT SWITCH
9. FRONT LOADING GEAR
10. TOGGLE (S) GEAR BLOCK
11. TOGGLE (T) GEAR BLOCK
12. DRUM MOTOR BLOCK

# III. MAIN COMPONENTS REPLACEMENT

## 3-1.REMOVAL OF THE EJECTOR BLOCK

Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

### 3-1-1. Removal of the CASSETTE LOAD BLK

1) Remove the two Ⓐ screws on the UPPER PLATE, as shown in Fig. 3-1 then remove the UPPER PLATE.
2) Lift up the FRONT GUIDE while pushing the CASSETTE LOAD BLK backwards, then remove the FRONT GUIDE.
3) Gently lift up the front side of the CASSETTE LOAD BLK, then remove it. To avoid damaging the pins of the CASSETTE LOAD BLK and the groove of the MECHA.FRAME, do not use excessive force when removing the CASSETTE LOAD BLK.

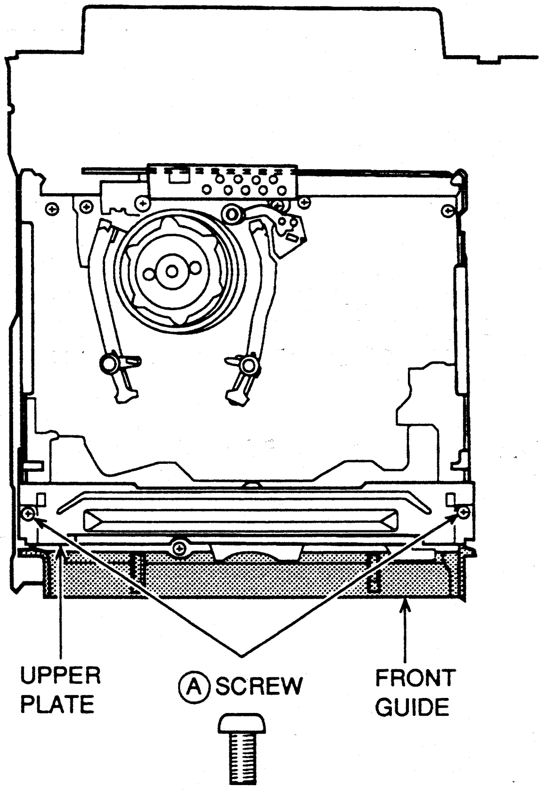


Fig. 3-1

### 3-1-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (Refer to Fig. 3-2) by pressing the stopper tab with a flat head (**—**) screwdriver. Then remove the shaft's right end from the bracket.

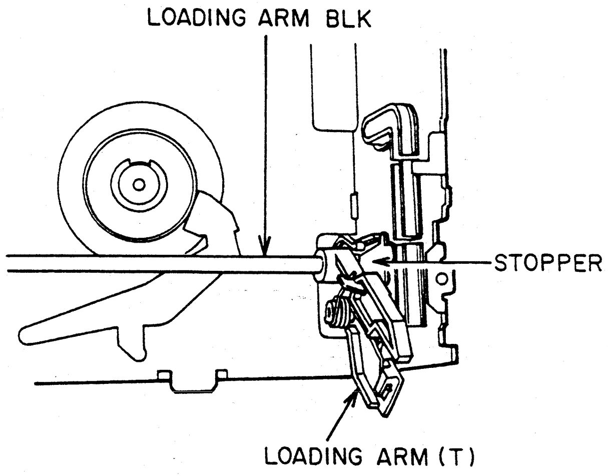


Fig. 3-2

2) Hold the LOADING ARM (T) and turn it 30 degrees clockwise, then pull out the shaft's left end from the bracket. Take special care when removing it to avoid damaging the JOINT and EJECT GEARs. (Refer Fig. 3-3)

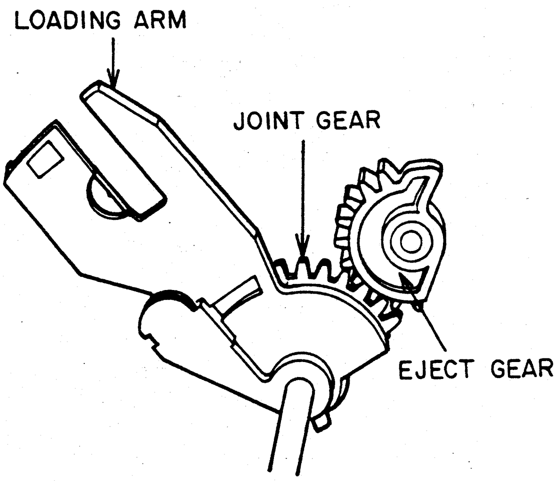


Fig. 3-3

## 3-2. REMOVAL OF THE SENSOR PC BOARD

∗ Before proceeding with removal of the SENSOR PCB, the loading mechanism must be set to the "unloaded" position (the position where the CAM SLIDER GEAR's groove mark is visible through the hole of the MODE SELECT SW.) as shown in Fig. 3-4.

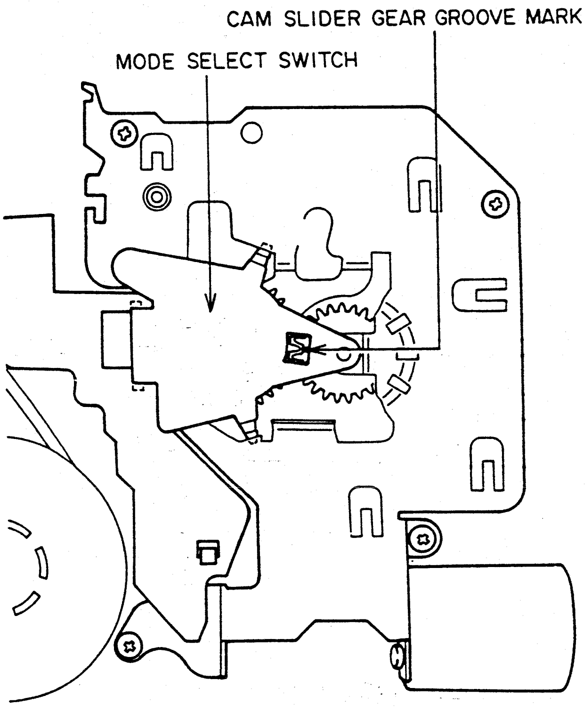


Fig. 3-4

To set the loading mechanism to the "unloaded" position, proceed with one of the following procedures.

1) Insert a video cassette tape which you no longer need. Once the tape has been loaded or has entered the "play" mode, press the POWER button to turn the power off. Disconnect the AC power plug from the AC socket after the cassette tape has been unloaded.
2) Remove the UPPER PLATE, FRONT GUIDE and CASSETTE LOAD BLK. (Refer to 3-1-1. Removal of the CASSETTE LOAD BLK.)
   Plug in the AC power cord. The LOADING ARM BLK will move backward and forward continuously. With your fingers, cover and hold both the SENSOR (S) and SENSOR (T) at the same time when the LOADING ARM BLK is in the backward position. The unit will enter the "play" mode without a cassette tape. Then release your fingers from both the sensors at the same time. After about 10 seconds (when the PINCH ROLLER is disengaged from the CAPSTAN and the SUPPLY REEL stops rotating), press the POWER button on the OPERATION PCB. The mechanism will be set to the "tape unloaded" position a few seconds later.
   Disconnect the AC power plug from the AC power socket.

### 3-2-1. Removal of the MODE SELECT SWITCH

1) Release the two Ⓐ stoppers as shown in Fig. 3-5.

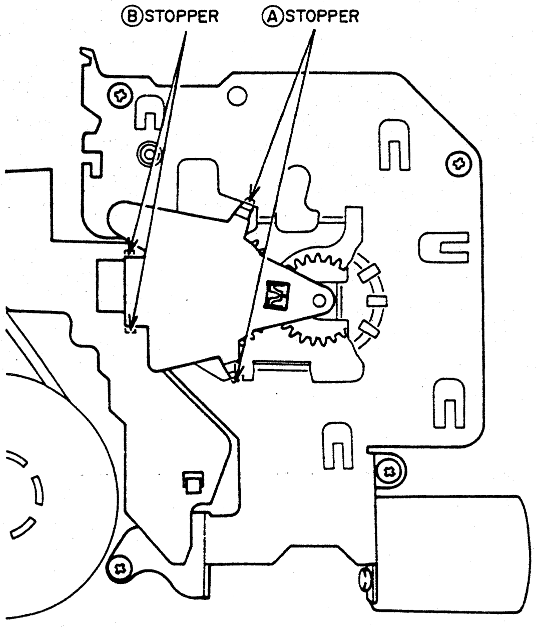


Fig. 3-5

2) Release the two Ⓑ stoppers carefully while pulling up the MODE SELECT SWITCH. Then remove the MODE SELECT SWITCH. (Do not damage the pins of the MODE SELECT SWITCH or the P1 connector on the SENSOR PCB).

### 3-2-2. Removal of the SENSOR PC Board

1) Disconnect the connector P303 on the MAIN (A) PCB.
2) Remove the capstan belt.
3) Release the Ⓐ, Ⓑ and Ⓒ stoppers as shown in Fig. 3-6. Then remove the SENSOR PCB.

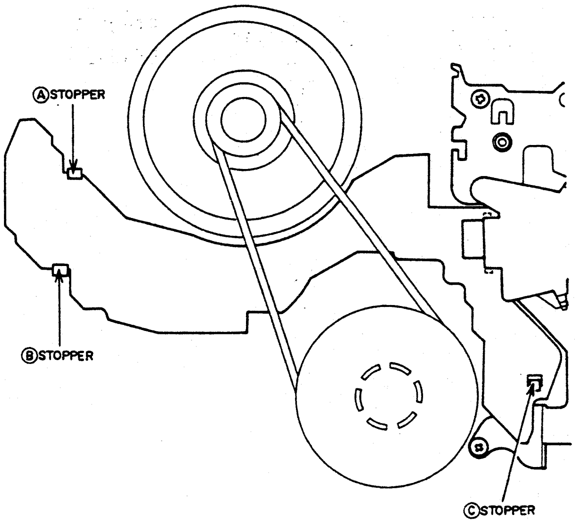


Fig. 3-6

## 3-3. REMOVAL OF THE LOADING DRIVE BLK

Set the loading mechanism to the "unloaded" position as well as 3-2 (REMOVAL OF THE SENSOR PC BOARD). However, this time, to avoid damaging the tape and mechanical parts, refer to 3-2, ∗ 2) only.

1) Remove the MODE SELECT SWITCH (refer to 3-2-1 Removal of the MODE SELECT SWITCH).
2) Unhook the five wires from each tab. Two wires from the SENSOR (S), two wires from the LOADING MOTOR and one wire from the REC SAFETY SWITCH.
3) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws, then remove the LOADING DRIVE BLK as shown in Fig. 3-7.

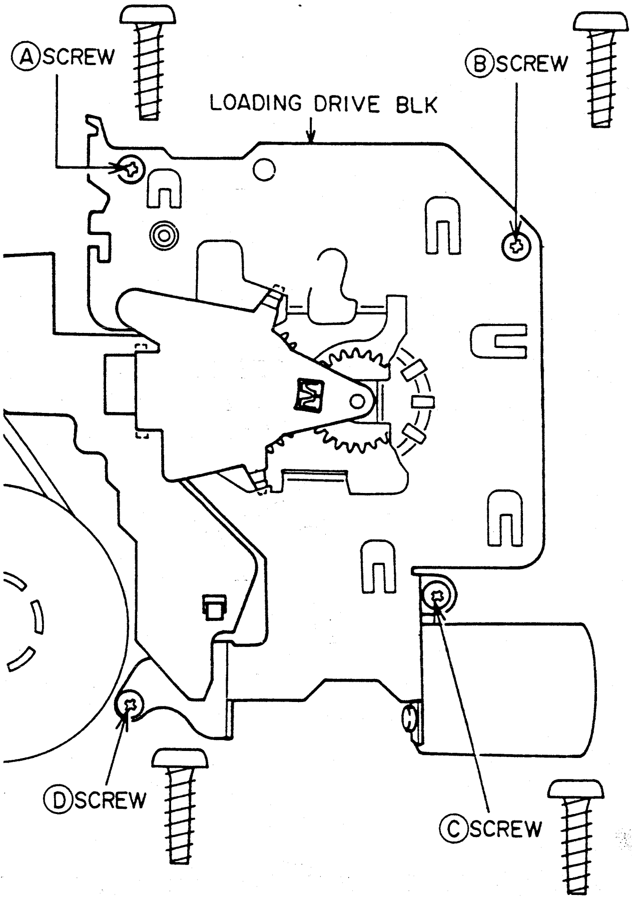

ⒶSCREW
ⒷSCREW
LOADING DRIVE BLK
ⒹSCREW
ⒸSCREW

Fig. 3-7

## 3-4. REASSEMBLY OF THE LOADING MECHANISM BLK

### 3-4-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEARs (T) and (S) to the unloaded position with your fingers. Align the Ⓐ mark on TOGGLE GEAR (S) with the Ⓐ hole of TOGGLE GEAR (T) as shown in Fig. 3-8.

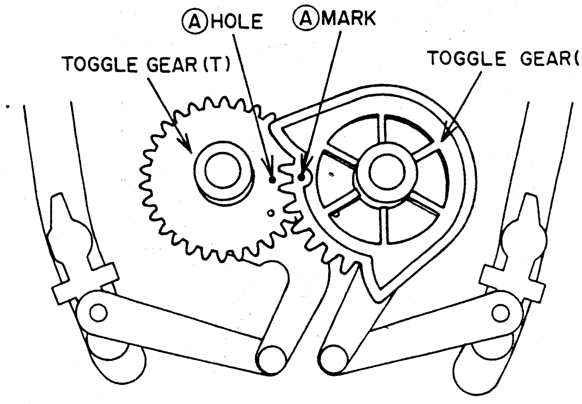

ⒶHOLE
ⒶMARK
TOGGLE GEAR (T)
TOGGLE GEAR(S)

Fig. 3-8

### 3-4-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 3-9.

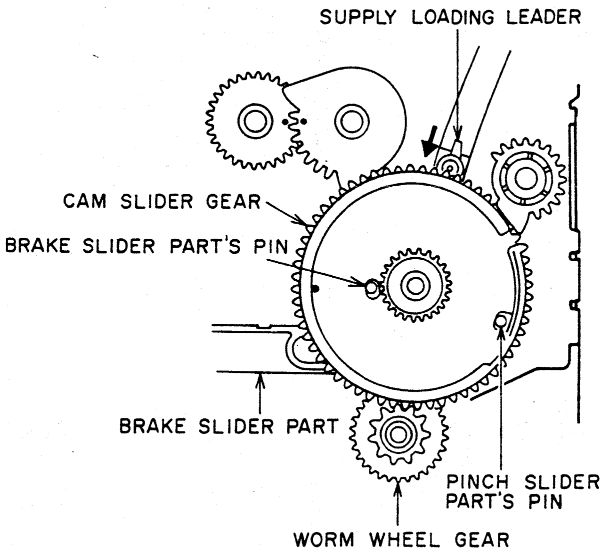

SUPPLY LOADING LEADER
CAM SLIDER GEAR
BRAKE SLIDER PART'S PIN
BRAKE SLIDER PART
PINCH SLIDER PART'S PIN
WORM WHEEL GEAR

Fig. 3-9

2) Set the CAM SLIDER GEAR and adjust the position of the BRAKE SLIDER PART and PINCH SLIDER PART so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig. 3-9. When inserting the CAM SLIDER GEAR onto its shaft, press the SUPPLY LOADING LEADER slightly in the direction of the arrow to make installation easy.

3) Attach the FRONT LOADING GEAR as shown in Fig. 3-10 and align the Ⓑ mark on the FRONT LOADING GEAR with the Ⓑ hole of the FRONT LOADING SLIDER as shown in Fig. 3-11.

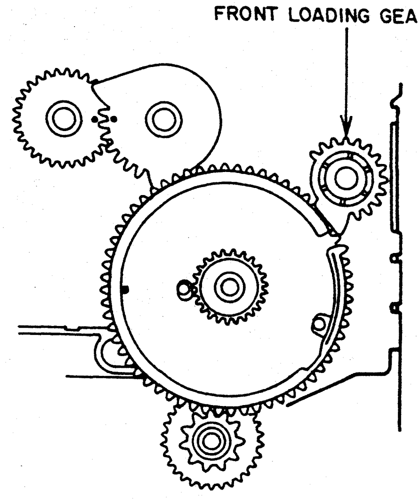

FRONT LOADING GEAR

Fig. 3-10

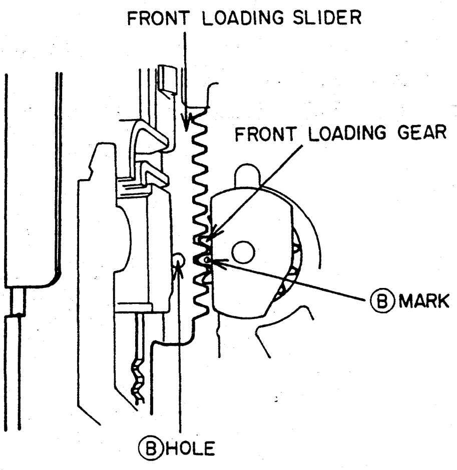

FRONT LOADING SLIDER
FRONT LOADING GEAR
ⒷMARK
ⒷHOLE

Fig. 3-11

### 3-4-3. Confirmation of the position of the EJECT GEAR

1) Confirm that the EJECT GEAR is in the correct position as shown in Fig. 3-12.

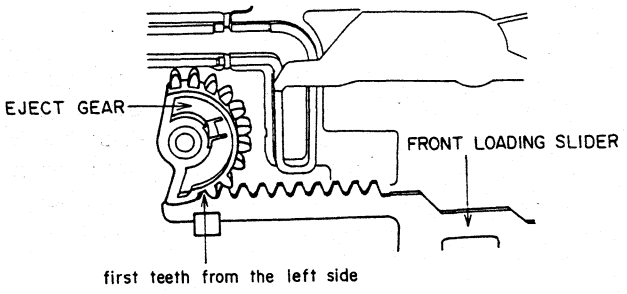

EJECT GEAR
FRONT LOADING SLIDER
first teeth from the left side

Fig. 3-12

2) Install the LOADING DRIVE BLK as shown in Fig.3-13.

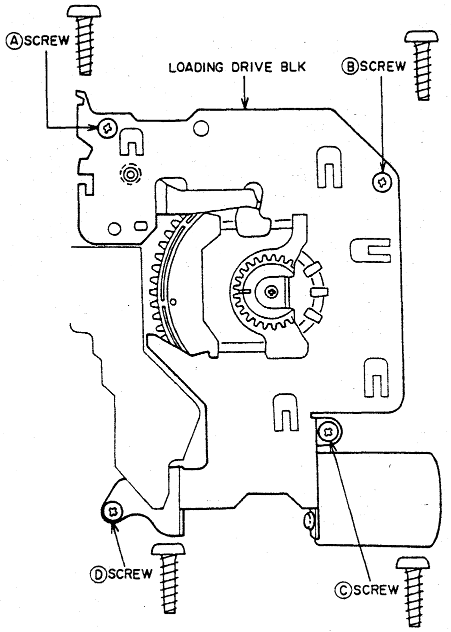

ⒶSCREW
LOADING DRIVE BLK
ⒷSCREW
ⒹSCREW
ⒸSCREW

Fig. 3-13

### 3-4-4. Installation of the MODE SELECT SWITCH

1) Set the MODE SELECT SWITCH's gear, so that the Ⓒ mark is in the center of the Ⓒ hole as shown in Fig. 3-14.

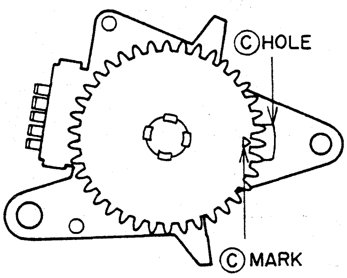


Fig. 3-14

2) Attach the MODE SELECT SWITCH to the LOADING DRIVE BLK and align the hollow of the gear's tooth (reverse side of the Ⓒ mark ) with the Ⓒ groove of the CAM SLIDER GEAR as shown in Fig. 3-15.

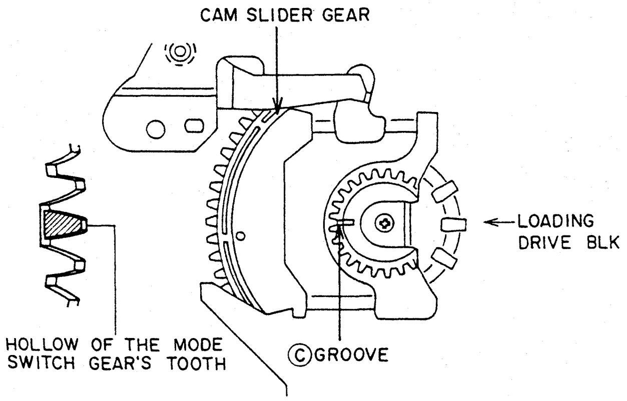

CAM SLIDER GEAR
LOADING DRIVE BLK
HOLLOW OF THE MODE SWITCH GEAR'S TOOTH
ⒸGROOVE

Fig. 3-15

### 3-4-5. Installation of the LOADING ARM BLK

1) While covering SENSOR (S) with your fingers, connect the AC power plug to the AC socket and then press the "EJECT" button on the OPERATION PCB. The FRONT LOADING SLIDER will reach the "EJECT" position. Then disconnect the AC power plug from the AC socket before you release your fingers from SENSOR (S).
2) Install the LOADING ARM BLK in the reverse order of 3-1-2 (Removal of the LOADING ARM BLK). Position the EJECT GEAR and the JOINT GEAR as shown in Fig. 3-16.

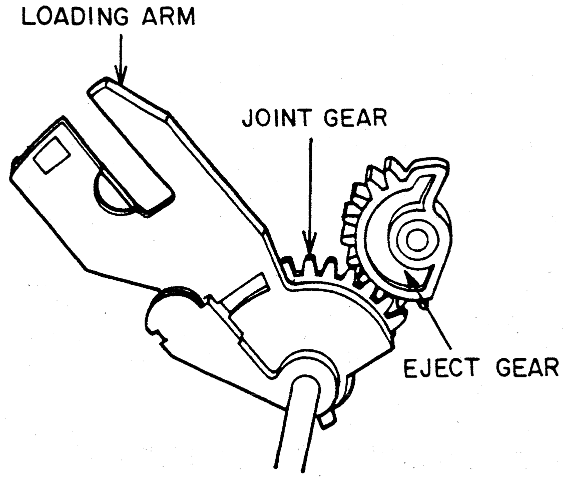


Fig. 3-16

### 3-4-6. Installation of the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE

1) Attach the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE in the reverse order of 3-1-1 (Removal of the CASSETTE LOAD BLK).
2) Insert a video cassette tape and confirm that the loading mechanism operates properly.

## 3-5. REPLACEMENT OF THE PINCH ROLLER PART

1) Remove the Ⓐ screw, then remove the PINCH ROLLER part, as shown in fig. 3-17
2) Set the pinch roller so that white plastic spacer side faces chassis when replacing. Then tighten the Ⓐ screw.

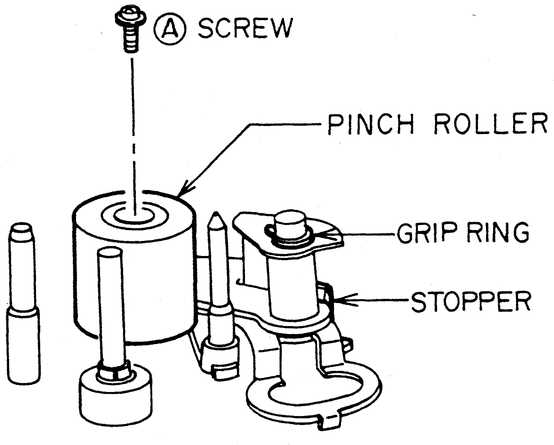


Fig. 3-17

## 3-6. REPLACEMENT OF THE IDLER PART AND REVIEW BRAKE PART

1) Remove the CASSETTE LOAD BLOCK & LOADING ARM BLK. (refer to 3-1, REMOVAL OF THE EJECTOR BLOCK).
2) Release the stopper of IDLER PART as shown in Fig. 3-18, then remove it.

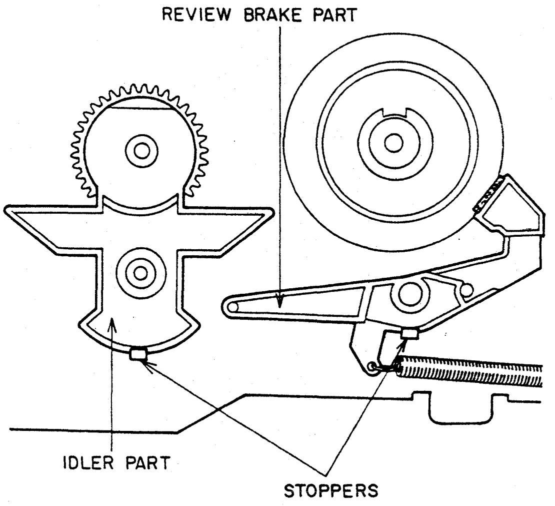


Fig. 3-18

3) Take off the review brake part spring, then release the stopper of the REVIEW BRAKE PART and remove it.
4) Reassemble the parts in the reverse order of steps 1) to 3).

## 3-7. REPLACEMENT OF THE UPPER DRUM

### 3-7-1. Removal of the UPPER DRUM

1) Remove one of the PRE AMP retaining screw and remove the EARTH BRUSH.
2) Unsolder the four relay leads and remove the two upper drum fixing screws as shown in Fig. 3-19.
3) Gently lift and remove the UPPER DRUM.

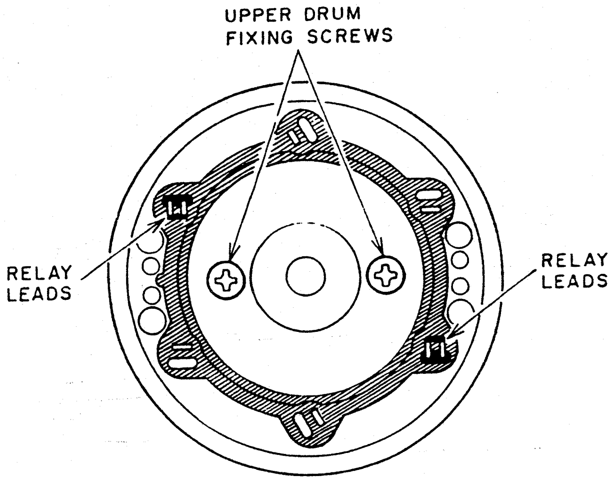


Fig. 3-19

### 3-7-2. Installation of the UPPER DRUM

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR, so that the upper drum convex Ⓐ and lower drum rotor's white PCB side line up, as shown in Fig. 3-20.

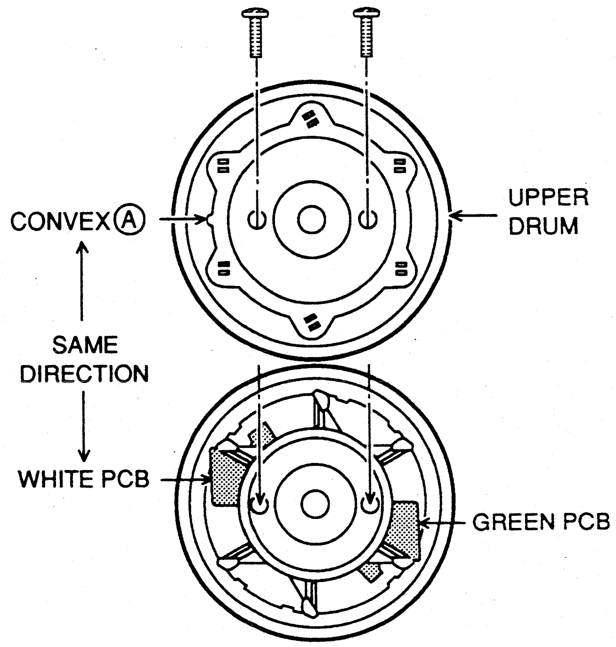


Fig. 3-20

NOTE: Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes, on the rotary transformer part, and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually.

### 3-7-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.

1) Control head Phase adjustment (IV. MECHANICAL ADJUSTMENT 4-3-3.)
2) PB switching point adjustment. (V. ELECTRICAL ADJUSTMENT Step 1)
3) Video head REC current adjustment. (V. ELECTRICAL ADJUSTMENT Step 7)
4) ENV. DET (I-HQ) adjustment. (V. ELECTRICAL ADJUSTMENT Step 8)

## 3-8. DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and then remove it.
   Then disconnect the connector on the DRUM MOTOR PCB as shown.

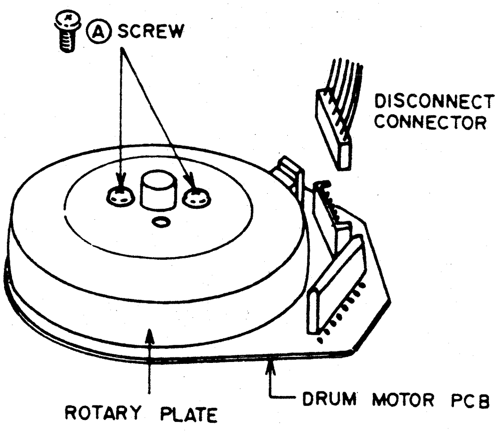


Fig. 3-21

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace it.

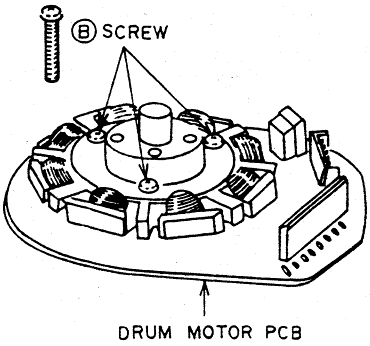


Fig. 3-22

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole line up

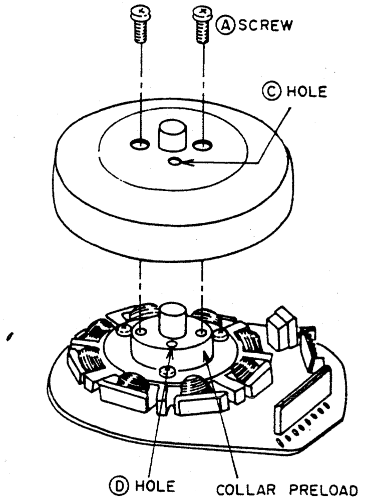


Fig. 3-23

4) After replacement, PB switching point adjustment (V. ELECTRICAL ADJUSTMENT Step 1) is necessary for the proper performance.

## 3-9. REMOVAL OF THE PRE AMP PCB

1) Remove the TRANS COVER if attached (refer to step 1-4).
2) Remove the Ⓐ screw and remove the EARTH BRUSH as shown in Fig. 3-24.

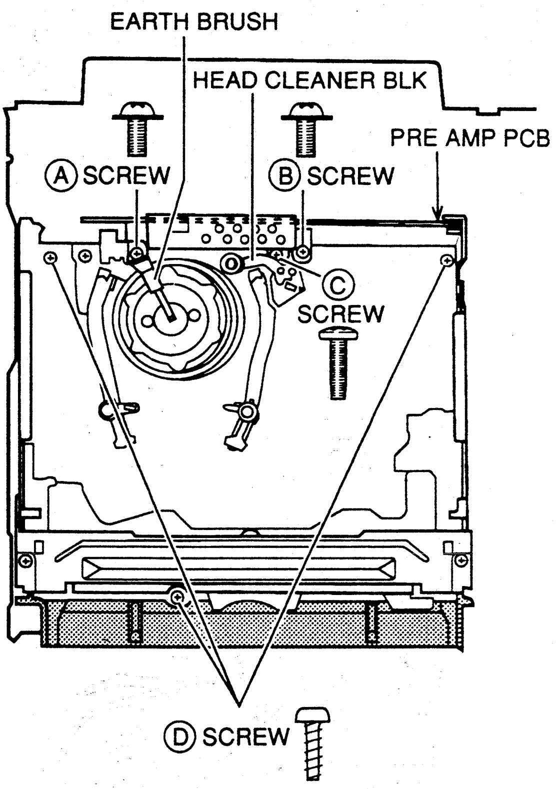


Fig. 3-24

3) Remove the Ⓑ screw and remove the DIODE PCB (if attached) then pull up the PRE AMP PCB carafully.
4) Reassemble in the reverse order for installation. When positioning the PRE AMP PCB, carefully align the P1 connector on the PRE AMP PCB to the VIDEO HEAD's FPC cable not to damage the FPC cable.

## 3-10. REPLACEMENT OF THE HEAD CLEANER BLOCK

1) Remove the PRE AMP PCB (refer to step 3-9).
2) Remove the Ⓒ screw on the HEAD CLEANER BLOCK.
3) Reassemble in the reverse order for installtion.

## 3-11. REMOVAL OF THE MECHANISM BLOCK (MECHA. FRAME)

1) Remove the PRE AMP PCB (refer to step 3-9).
2) Disconnect the connectors P301, P302, P303 on the MAIN (A) PCB and P1 on the A/C HEAD PCB.
3) Disconnect the connector on the FULL TRACK ERASE HEAD and P4 connector on the OPERATION PCB.
4) Remove the three Ⓓ screws from the MECHA. FRAME as shown in Fig. 3-24.
5) Hold the rear side of the MECHA. FRAME then remove it by pulling it up backwards.
6) Reassemble in the reverse order for installation.

# IV. MECHANICAL ADJUSTMENT

## 4-1. BACK TENSION ADJUSTMENT

1) Prepare a video cassette tape which you no longer needed. Remove both tape reels and the tape protection cover from the cassette tape. Then cover the video cassette's left and right side detection holes with black adhesive tape.
2) Play back the tapeless cassette which you prepared.
3) Confirm the distance between Ⓐ groove on the TENSION ARM and the Ⓐ mark on the MECHA. CHASSIS so that the distance should be within the value shown in Fig. 4-1
4) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until the result is satisfactory.

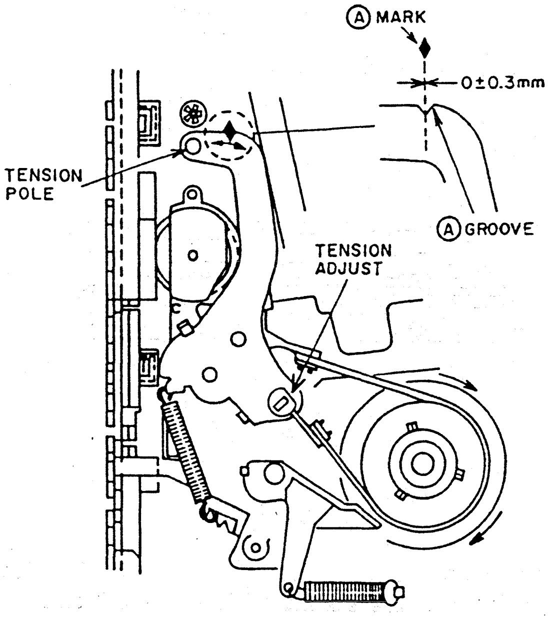


Fig. 4-1

## 4-2. TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found, since these adjustment are precisely set at the factory.

### 4-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK, until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle.
3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 4-3. A/C HEAD POSITION ADJUSTMENT.)

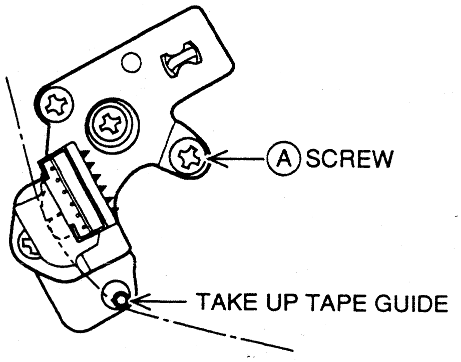
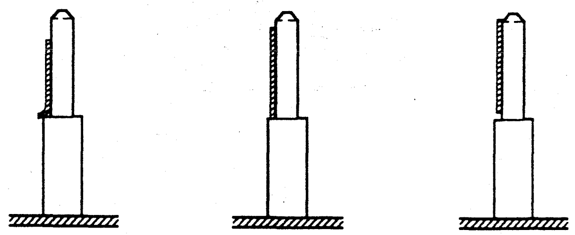


Fig. 4-2

(TAKE-UP TAPE GUIDE)

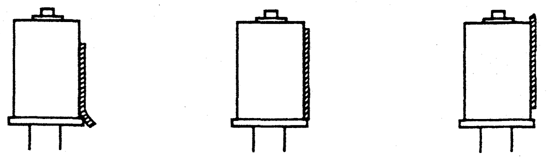


(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 4-3

### 4-2-2. Confirmation of tape curl on the SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE, without any curl or wrinkle as shown in Fig. 4-4.



INCORRECT CORRECT INCORRECT

Fig. 4-4

### 4-2-3. REVIEW ARM height adjustment

1) Play back the beginning part of an E-240 tape and set the unit to the REVIEW mode by pressing the REW button. (Remove the tape protection cover to make the adjustment easier.)

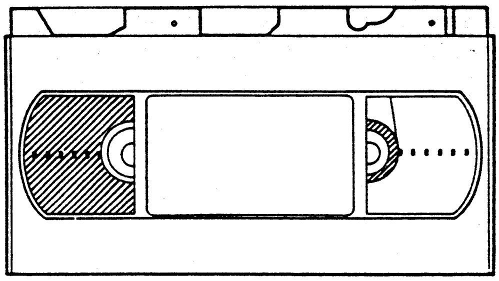


Fig. 4-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE, without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig. 4-6 to Fig. 4-8.

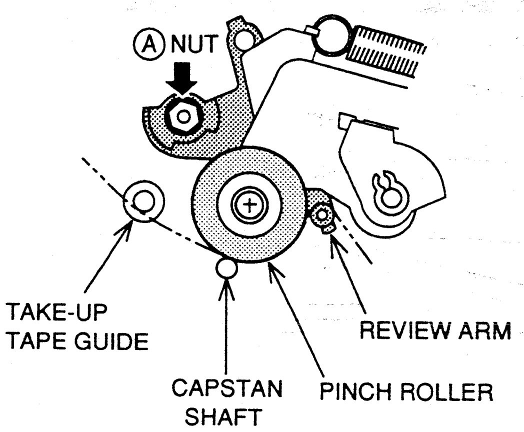
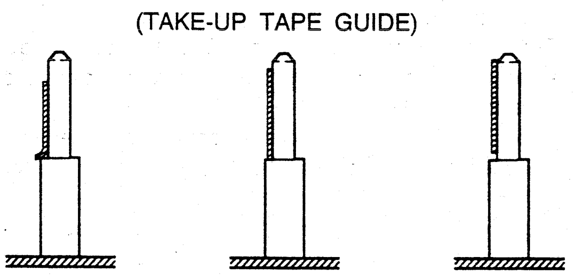
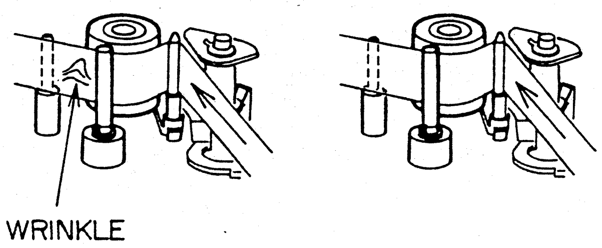


Fig. 4-6



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 4-7

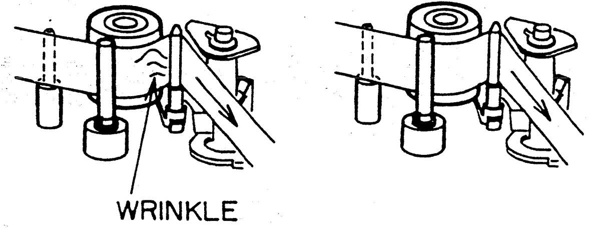


INCORRECT CORRECT

Fig. 4-8

3) Play back the beginning part of an E-240 tape and this time set the unit to the CUE mode by pressing the F. FWD button.

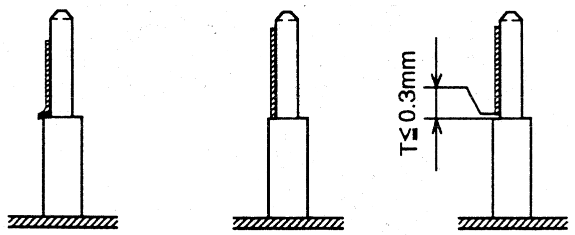
4) Confirm there is no curl or wrinkle near the REVIEW ARM's guide.
If curl or wrinkle of the tape occurs, slightly turn the Ⓐ nut (shown in Fig. 4-6) until it disappears.



INCORRECT CORRECT

Fig. 4-9

5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 4-10

NOTE:

1. If the results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 tape can be damaged easily, due of its thinness, a pre-adjustment with an E-180 tape is recommended.

### 4-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer to Fig. 4-11.)

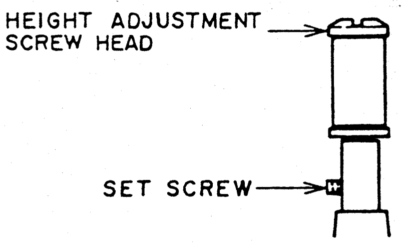
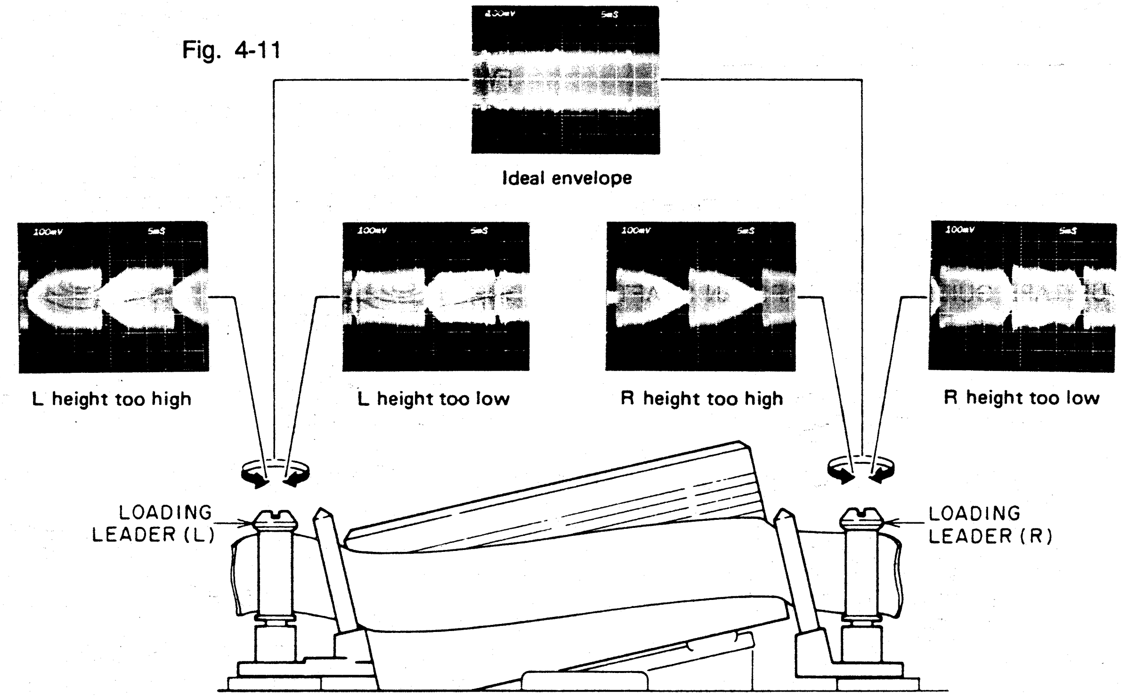


Fig. 4-11

2) Play back reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to TR510 emitter (ENVE) on the MAIN (A) PCB and CH-2 to TP1 (V-SWP) on the PRE AMP PCB for triggering.
4) Turn the LOADING LEADER heads with a flat head (—) screwdriver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 4-12.
5) After adjustment is completed, tighten the loading leader set screws.



Ideal envelope

L height too high

L height too low

R height too high

R height too low

Fig. 4-12

## 4-3. A/C HEAD POSITION ADJUSTMENT

### 4-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output.

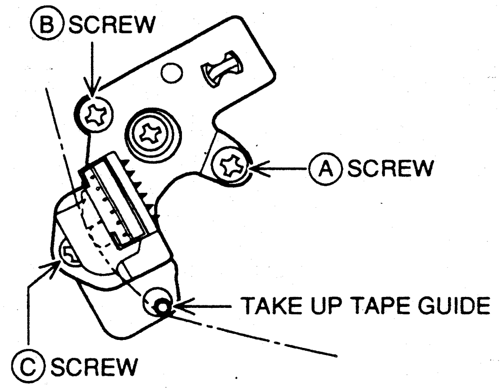
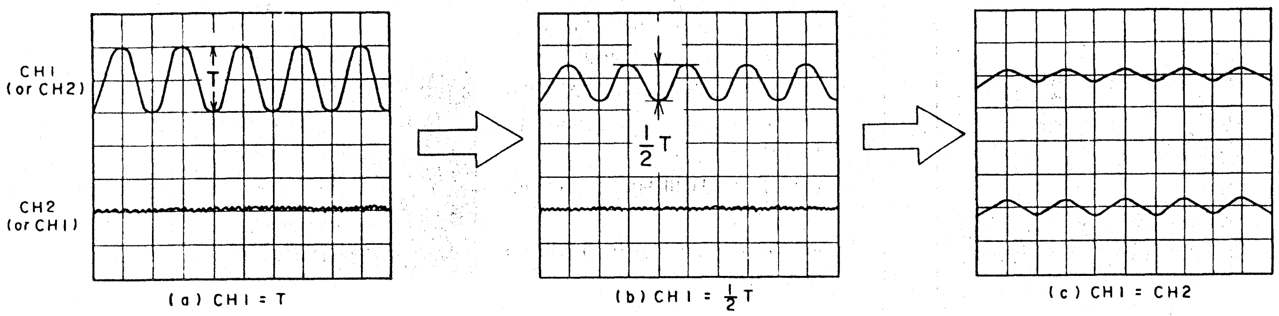


Fig. 4-13

### 4-3-2. Height adjustment

1) Play back test tape TF-526HH (AT-751788).
2) Connect an oscilloscope's CH-1 to the AUDIO OUT terminal on the rear panel and CH-2 to TP301 (CTL OUT) on the MAIN (A) PCB.
3) Turn the Ⓒ screw to obtain 1/2 of the output level of either CH-1 or CH-2, whichever has an output signal as shown in Fig. 4-14.
   Then set both of the oscilloscope's channels to 100 mV/div and finely adjust the Ⓒ screw until both signals of CH-1 and CH-2 are nearly the same level.
4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig. 4-3.
5) Adjust the head azimuth again. (Turning the Ⓒ screw, or Ⓐ screw, will cause head azimuth mis-alignment. Refer to 4-3-1. Azimuth adjustment.)
6) Confirm that both signals of CH-1 and CH-2 are nearly the same level (confirm that neither of the CH-1 or CH-2 output levels exceed 100 mVp-p). If the result is not satisfactory, repeat steps 3) to 5).



(a) CH1 = T (b) CH1 = $\frac{1}{2}$T (c) CH1 = CH2

Fig. 4-14

### 4-3-3. Phase adjustment

1) Connect an oscilloscope's CH-1 to the TR510 emitter (ENVE) on the MAIN (A) PCB and CH-2 to TP1 (V-SWP) on the PRE AMP PCB for triggering.
2) Play back reference tape TF-530RFS (AT-751775).
3) Press the "<" or ">" cursor button on the remote control until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig. 4-15.

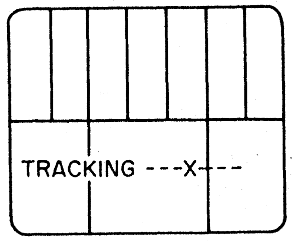


Fig.4-15

4) Loosen the Ⓓ screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.

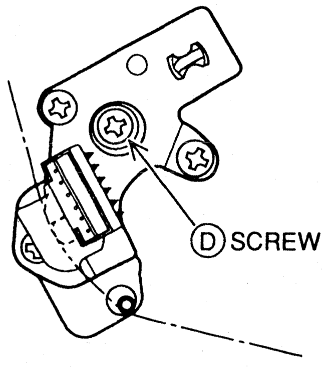


Fig.4-16

5) Insert a philips type screwdriver into the Ⓐ hole through the A/C HEAD BASE as shown in Fig. 4-17.

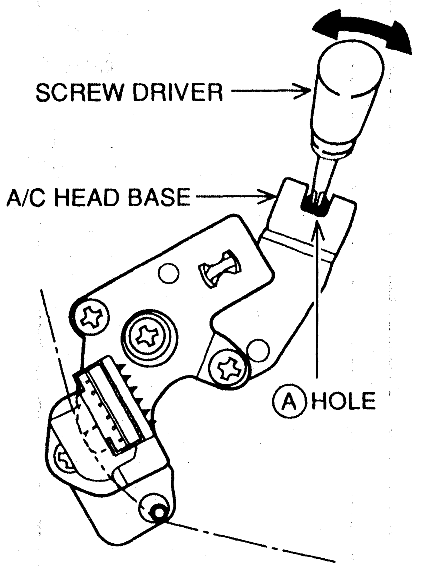


Fig. 4-17

6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig. 4-17 to obtain the maximum RF output, then tighten the Ⓓ screw.
7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activiated. Next, press the "<" or ">" cursor button on the remote control unit alternately and confirm that the RF output is maximum at the tracking center position. If the result is not satisfactory, repeat the adjustment, step 2) to 6). (This adjustment is very important as this affects to the interchangeability of the recorded tapes.)

# V. ELECTRICAL ADJUSTMENT

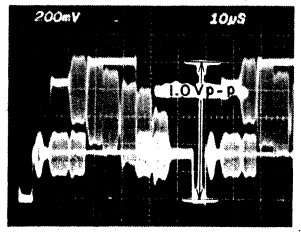
Precautionary items prior to adjustments
1. The colour bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).
3. Make sure that the A/C head phase adjustment has been adjusted correctly before making PB SWITCHING POINT ADJUSTMENT (refer to step 4-3-3).

The following test tapes are required.

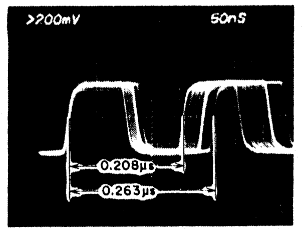
| Test tape | Parts No. |
|---|---|
| TF-527BL | AT-711880 |
| TF-530RFS | AT-751775 |
| TF-532CBS | AT-751360 |
| TF-556AT | AT-751822J |

**STEP | ADJUSTMENT ITEM**
1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ part → ADJ. part
3. REMARKS (•) & RESULT (∗) → Test point

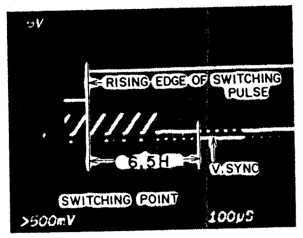
**7 | VIDEO PB LEVEL**
1. "REC" → "PB", PAL colour bar signal
2. VIDEO OUT & VR404 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT
   - • Make a recording on a blank tape, then play it back
   - ∗ Adjust VR404 so that the PB level becomes 1.0 Vp-p



**5 | CARRIER SET & DEVIATION**
1. "REC", PAL colour bar signal
2. TP401 (REC.Y) & VR402 (CARRIER), VR403 (DEVIATION)
3. • Connect an oscilloscope to TP401 (REC.Y)
   - ∗ VR402 (CARRIER) : 0.263 us (3.8 MHz)
   - ∗ VR403 (DEVIATION): 0.208 us (4.8 MHz)

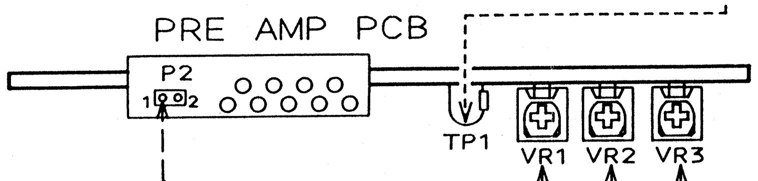


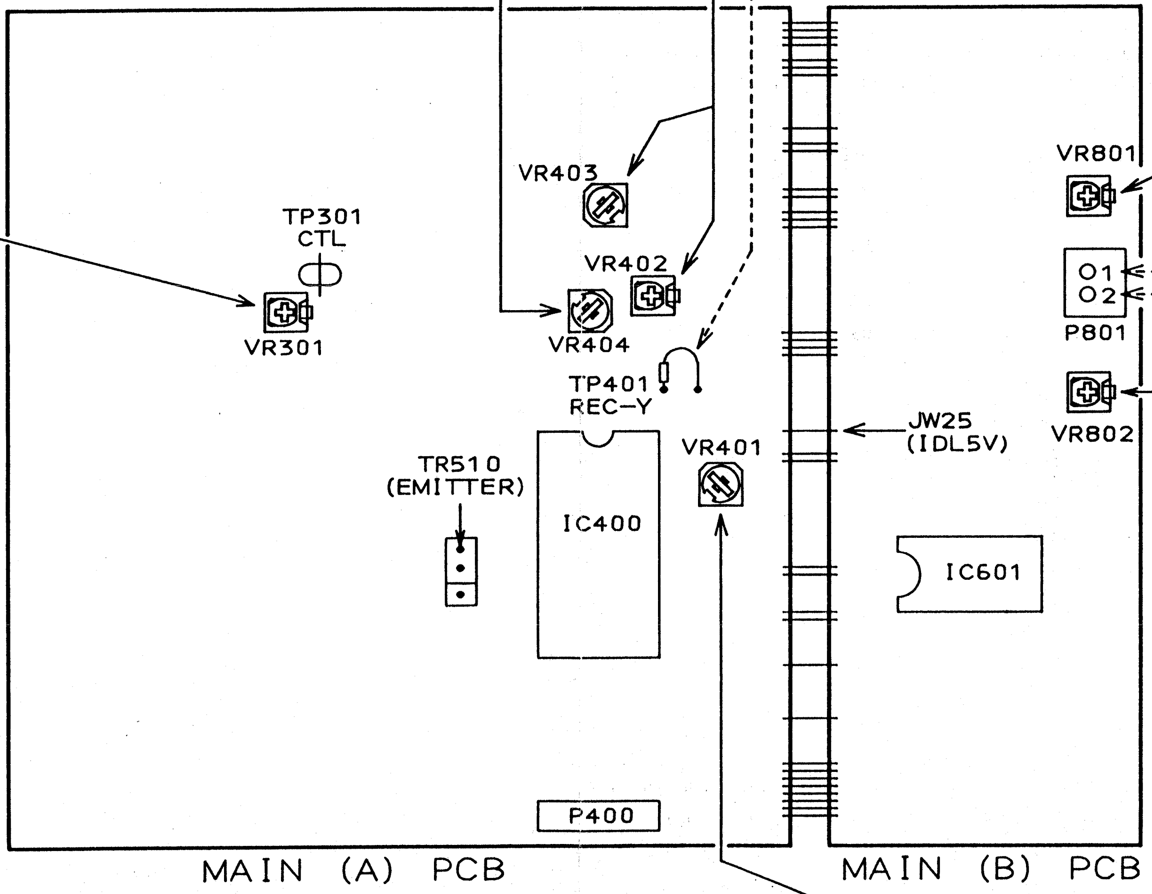
**1 | PB SWITCHING POINT**
1. "PB", test tape TF-530RFS
2. TP1 (SWP), VIDEO OUT & VR301 (SW. POINT)
3. • Connect an oscilloscope's CH-1 to TP1 (SWP) for triggering and CH-2 to VIDEO OUT.
   - • Play back the test tape and set the tracking to the center position with the remote control unit.
   - ∗ Adjust VR301 so that the switching point is positioned 6.5 H from the V-SYNC left edge as shown.



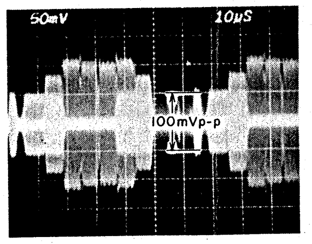
**2 | AUDIO PB LEVEL**
1. "PB", test tape TF-527BL
2. AUDIO OUT & VR801
3. • Connect AC voltmeter to AUDIO OUT
   - ∗ -5 dBs

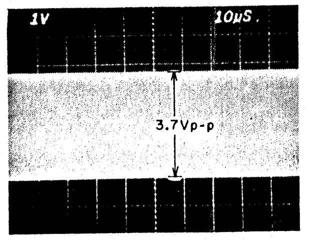
**3 | AUDIO REC BIAS**
1. "REC", No signal input
2. P801 ① pin, ② pin & VR802
3. • Connect an AC voltmeter to P801 ① pin (GND side) and ② pin. (Never connect the AC voltmeter's GND to the VCR's ground.)
   - ∗ Adjust VR802 so that the reading on the AC voltmeter becomes 2.5 mV





**6 | VIDEO REC CURRENT**
1. "REC", PAL colour bar signal
2. P2 (REC.CURR) ① pin & VR1 (REC-CHROMA), VR2 (REC-Y)
3. • Connect an oscilloscope's CH-1 to P2 (REC.CURR) ① pin and CH-2 to VIDEO OUT for triggering.
   - • Connect the TP401 to the JW25 (IDL5V) with a jumper wire.
   - ∗ Adjust VR1 (REC-CHROMA) so that the chroma REC current becomes 100 mVp-p at the burst signal area. (Measure the center value of the noise part of the burst signal.)
   - ∗ Disconnect the jumper wire and colour bar input signal, then adjust VR2 (REC-Y) so that the Y REC current becomes 3.7 Vp-p.

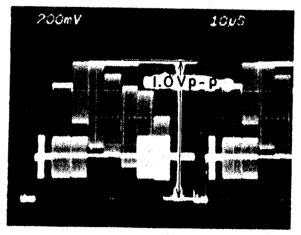




**8 | ENVELOPE DETECT (I-HQ)**

(This adjustment should be performed in the "TEST" mode.)
To set the VCR to the "TEST MODE", press and hold both the "POWER" and "EJECT" buttons on the front panel, then plug in the AC power cord.
The TEST MODE can be cancelled by disconnecting the AC power cord or simply by pressing the RESET button on the front panel.
1. "REC" → "PB", PAL colour bar signal
2. FL display & VR3
3. • Record the PAL colour bar signal on the test tape TF-556AT and then play it back.
   - • Observe the number which is displayed on the minute part of the FL display.
   - ∗ Adjust the VR3 so that the number displayed on the FL display becomes "94".

**4 | VIDEO E-E LEVEL**
1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR401 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   - ∗ 1.0 Vp-p



# VI. PARTS LIST

**ATTENTION**

1. **When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

## HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

### 2. HEAD BASE BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | BH-T2023A320A | HEAD BASE BLOCK |
| 2 | HP-H2206A010A | HEAD R/P PR4-8FU C |
| 3 | ZS-477876 | PAN20×03STL CMT |
| 4 | ZS-536488 | BID20×08STL CMT |
| 5 | ZG-402895 | SP CS ANGLE ADJUST |

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

### 6. MAIN PC BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| IC1 | EI-324536 | IC HD14049BP |
| IC2 | EI-336801 | IC MB8841-564M |
| C1A | EC-338399 | C MMY V 223M 250AC [U,E,B,S] |
| C1B | EC-350949 | C MMY V 223M 250DC [J] |
| C1C | EC-338397 | C MMY V 223M 125AC [C,A] |
| X1 | EI-318384 | OSC X'TAL NC-18C |

Symbols for primary destination

[A] :AAL (U.S.A)
[B] :BEAB (England)
[C] :CSA (Canada)
[E] :CEE (Europe)
[J] :JPN (Japan)
[S] :SAA (Australia)
[U] :U/T (Universal Area)
[V] :VDE (Germany)
[Y] :Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

**WARNING**

**⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.**

**AVERTISSEMENT**

**⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.**

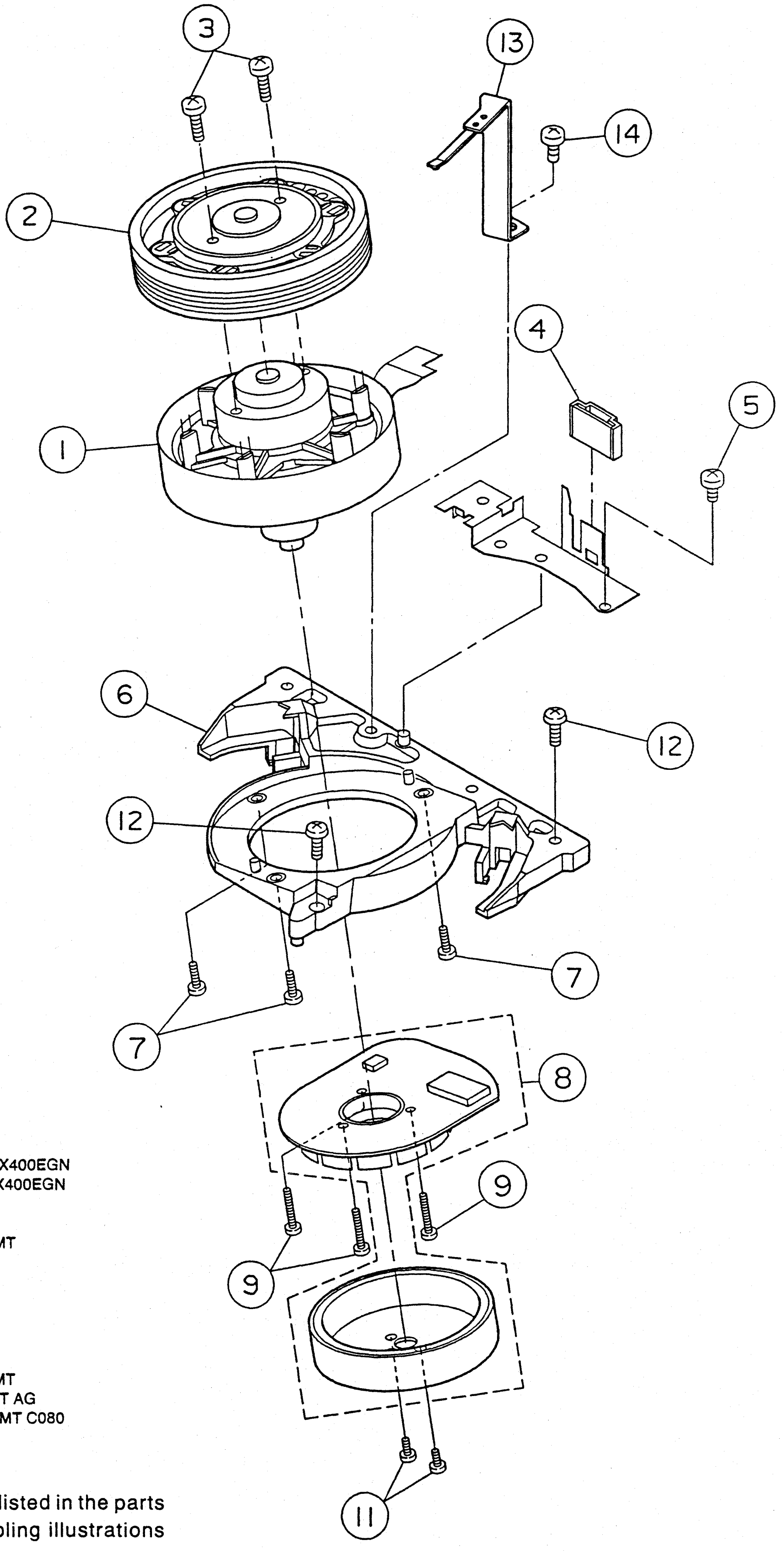
## 1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | AV-B1038A010A | REMOCON BLK RC-V250E<br>[EXCEPT EOG/G23EOH/EOG-V] |
| 2 | AV-B1051A010B | REMOCON BLK RC-W201G<br>[EOG-V] |
| 3 | AV-B1050A010A | REMOCON BLK RC-W202E<br>[G23EOH] |
| 4 | AV-B1050A010D | REMOCON BLK RC-W202G<br>[EOG] |
| 5 | AV-B1065A010A | REMOCON BLK RC-W212E<br>[G24EK] |
| 6 | BB-V1130A020L | MECHA DECK BLK G20EDG |
| 7 | BL-V1102A140A | ARM LOADING BLK 425EA |
| 8 | BL-V1102A050A | TENSION ARM BLK 425EA |
| 9 | BM-400682J3 | MOTOR DFX-67B3VWB2<br>[CAPSTAN MOTOR] |
| 10 | BM-401296J1 | MOTOR E20EL89<br>[DRUM MOTOR] |
| 11 | BM-387503J | MOTOR PART<br>[LOADING MOTOR] |
| 12 | *BT-410491J | TRANS POW V1130 EDG<br>[EDG] |
| 13 | *BT-416855J | TRANS POW V1164 EA<br>[EK] |
| 14 | *BT-410488J | TRANS POW V1130 EM<br>[EM] |
| 15 | *BT-403873J | TRANS POW V1130 EO<br>[EOH/EO/EOG] |
| 16 | *BT-410606J | TRANS POW V1146 EOG-V<br>[EOG-V] |
| 17 | BV-V1102A150A | CASSETTE LOAD BLK 425EA |
| 18 | BV-V1102A070A | LEADER S BLK 425EA |
| 19 | BV-V1102A080A | LEADER T BLK 425EA |
| 20 | BV-V1123A410A | LOWER DRUM BLK X400EGN |
| 21 | BV-403410J | RF CONVERTER MDLK6B733A EK<br>[EK] |
| 22 | BV-403409J | RF CONVERTER MDLK6D755A EO<br>[EOH/EO/EOG/EOG-V] |
| 23 | BV-403408J | RF CONVERTER MDLK6E753A EDG<br>[EDG] |
| 24 | BV-387611J1 | RF CONVERTER YAA21-0808G EV<br>[EM] |
| 25 | BV-V1123A420A | UPPER DRUM BLK X400EGN |
| 26 | BV-403238J1 | VIF UNIT KX EK<br>[EK] |
| 27 | BV-403239J1 | VIF UNIT KX EM<br>[EM] |
| 28 | BV-403241J1 | VIF UNIT KX EOG<br>[EO] |
| 29 | BV-403240J1 | VIF UNIT KX EOH<br>[EOH] |
| 30 | BV-416729J | VIF UNIT KX-TEK EOG<br>[EOG/EOG-V] |
| 31 | BV-412399J | VIF UNIT KX-38.9 EDG<br>[EDG] |
| 32 | EA-387496J | PC (#) SENSOR |
| 33 | *EC-391843J | C DOUBLE FYD0H223Z 5.5DC |
| 34 | EC-408376J | C EC V CUT KMG 102M 50.0DC |
| 35 | EC-410530J | C EC V CUT KMG 332M 50.0DC |
| 36 | EC-408426J | C EC V F05 LXF8 121M 50.0DC |
| 37 | EC-403371J | C EC V F05 LXF8 221M 25.0DC |
| 38 | EC-403878J | C EC V T05 LXF8 271M 16.0DC |
| 39 | EC-404197J | C EC V T05 SXE8 330M 80.0DC |
| 40 | ED-390011J | D LED GL451 INFRARED<br>[D1] |
| 41 | ED-390012J | D LED GL4800 INFRARED<br>[D2] |
| 42 | ED-403450J | D LED SE303ARF-C INFRARED |
| 43 | ED-416503J | D LED SID1010CXM LF51 INFRARED |
| 44 | ED-401099J | D SCHOTTKY MA719 T26 40/0.5A<br>[EOG/EOG-V] |
| 45 | ED-386226J | D SCHOTTKY RB100AT-32T26 40/1<br>[EOG/EOG-V] |
| 46 | ED-386031J | D SILICON CHIP MA110-TW |
| 47 | *ED-379298 | D SILICON DBA20B 100/2.0A |
| 48 | ED-366443 | D SILICON H MA700FA5 F10 |
| 49 | ED-307572 | D SILICON H 1SS131 |
| 50 | ED-366684 | D SILICON H 1SS136 F05 |
| 51 | ED-401046J | D SILICON RL104F-E T26 400/1A |
| 52 | ED-511907 | D SILICON 1N4002 100/1.0A |
| 53 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| 54 | ED-402204J | D ZENER H HZS11A3<br>[EDG/EK] |
| 55 | ED-391005J | D ZENER H HZS12B1 |
| 56 | ED-396058J | D ZENER H HZS12B3<br>[EOH/EO/EOG] |
| 57 | ED-410359J | D ZENER H HZS15-1 T26 |
| 58 | ED-397319J | D ZENER H HZS15-2 |
| 59 | ED-404387J | D ZENER H HZS16-1 |
| 60 | ED-402230J | D ZENER H HZS36-1 |
| 61 | ED-408912J | D ZENER H HZS36-3 |
| 62 | ED-412105J | D ZENER H HZS5B1 T26 |
| 63 | ED-397233J | D ZENER H HZS5C3 |
| 64 | ED-387919J | D ZENER H HZS6A1L |
| 65 | ED-403743J | D ZENER H HZS6B3 |
| 66 | ED-405603J | D ZENER H MTZJ10B T26<br>[EOH/EO/EOG/EOG-V] |
| 67 | ED-403267J | D ZENER H MTZJ3.3B T26 |
| 68 | ED-405524J | D ZENER H MTZJ36A T26 |
| 69 | ED-405604J | D ZENER H MTZJ4.3C T26<br>[EOH/EO/EOG/EOG-V] |
| 70 | ED-403724J | D ZENER H UTZJ10A |
| 71 | ED-405264J | D ZENER H UTZJ10C |
| 72 | ED-404031J | D ZENER H UTZJ11B T26 |
| 73 | ED-403725J | D ZENER H UTZJ12C<br>[EK] |
| 74 | ED-403265J | D ZENER H UTZJ15A T26 |
| 75 | ED-403948J | D ZENER H UTZJ16C T26 |
| 76 | ED-403947J | D ZENER H UTZJ22C T26 |
| 77 | ED-403726J | D ZENER H UTZJ30B<br>[EOG/EOG-V] |
| 78 | ED-404033J | D ZENER H UTZJ33B |
| 79 | ED-405265J | D ZENER H UTZJ36C |
| 80 | ED-404032J | D ZENER H UTZJ39A |
| 81 | ED-403732J | D ZENER H UTZJ5.6A |
| 82 | ED-405446J | D ZENER H UTZJ5.6B T26 |
| 83 | ED-403730J | D ZENER H UTZJ6.2A<br>[EOG/EOG-V] |
| 84 | ED-403278J | D ZENER H UTZJ7.5B |
| 85 | ED-404086J | D ZENER H UTZJ7.5C |
| 86 | ED-403731J | D ZENER H UTZJ8.2C<br>[EOH/EOG/EOG-V] |
| 87 | ED-403279J | D ZENER H UTZJ9.1B |
| 88 | EE-412395J | TV TUNER ENV-578C9F1 EOH<br>[EOH] |
| 89 | EE-416524J | TV TUNER TEKE4-034 EOG<br>[EOG/EOG-V] |
| 90 | EE-387607J1 | TV TUNER TERB1-008B EK<br>[EK] |
| 91 | EE-387604J3 | TV TUNER TERE1-007D EOG<br>[EO] |
| 92 | EE-387603J1 | TV TUNER TERE1-019B EO<br>[EDG] |
| 93 | EE-405638J | TV TUNER VTSS6CZ EM<br>[EM] |
| 94 | *EF-413079J | FUSE S505 T 250V 1.00A |
| 95 | EH-383083J | COMP R RGLE3X 103J |
| 96 | EH-403945J | COMP R RGLE9X 103J |
| 97 | EH-416491J | DL EFDJLA13A |
| 98 | EH-394874J | FILTER CE SAF38.9MZA70Z |
| 99 | EH-730625J | FILTER CE SAF38.9MZW70Z<br>[EXCEPT EK] |
| 100 | EH-366894 | FILTER CE SFE-4.16MB 4.16MHZ<br>[EXCEPT EOH/EO/EK] |
| 101 | EH-373920 | FILTER CE SFE5.5MB<br>[EXCEPT EK] |
| 102 | EH-373921 | FILTER CE SFE6.0MB<br>[EK] |
| 103 | EH-412432J | FILTER CE SFSH6.5MDB 6.500MHZ |
| 104 | EH-368827 | FILTER CE SFS5.5MD 5.500MHZ |
| 105 | EH-373918 | FILTER CE TPS5.5MB |
| 106 | EH-729986J | FILTER CE TPS5.5MB2<br>[EM] |
| 107 | EH-368948 | FILTER CE TPS5.5MW 5.5000MHZ<br>[EXCEPT EM/EK] |
| 108 | EH-373919 | FILTER CE TPS6.0MB<br>[EK] |

| Ref. No. | Part No. | Description |
|---|---|---|
| 109 | EH-376338 | FILTER CE TPS6.5MB |
| 110 | EH-714628 | FILTER SAW SAF39.5MZ70Z<br>[EK] |
| 111 | EI-394680J | IC AN3171K |
| 112 | EI-373981J1 | IC BA10393N |
| 113 | EI-373980 | IC BA15218N |
| 114 | *EI-381575J | IC BA6121 |
| 115 | EI-353421 | IC BA6229 |
| 116 | EI-366892 | IC BA7025L<br>[EXCEPT EOH/EO/EK] |
| 117 | EI-388360J | IC BA7765AS |
| 118 | EI-356457 | IC BU4013B<br>[EM] |
| 119 | EI-414885J | IC CF72306 |
| 120 | EI-414884J | IC CF72307 |
| 121 | EI-403250J | IC LA7376 |
| 122 | EI-403234J1 | IC LA7391A |
| 123 | EI-394856J | IC LC8992 |
| 124 | EI-401050J | IC LVA523SA2 |
| 125 | EI-389622J | IC L5631 |
| 126 | EI-387019J | IC MC1377P |
| 127 | EI-403469J | IC MM1068XS |
| 128 | EI-414822J1 | IC MN675201A-XDS1 QBXSYP2 |
| 129 | EI-412300J | IC M50933-131FP QXDLCD1 |
| 130 | EI-416842J | IC M50934-069FP QXUKGW1 |
| 131 | EI-368809 | IC M51496P |
| 132 | EI-400756J | IC NJM4558L-B |
| 133 | EI-400672J | IC S-8052ALB-LE |
| 134 | EI-373955 | IC S-8053ALR |
| 135 | EI-385958J | IC SAA4700 |
| 136 | EI-408393J | IC ST24C01B1 |
| 137 | EI-405224J | IC ST24C02AB1/AAB |
| 138 | EI-410265J | IC ST24C04B1 |
| 139 | EI-200573 | IC TC4053BP<br>[EM] |
| 140 | EI-310036 | IC TC4066BP |
| 141 | EI-376112 | IC UPD6122G |
| 142 | EI-405722J | IC UPD6450CX-515 |
| 143 | EI-408430J1 | IC UPD75004CU-148 JXVPS2 |
| 144 | EI-414817J | IC UPD75217CW-185 QBXOPP1<br>[EXCEPT EOG/EOG-V] |
| 145 | EI-416736J | IC UPD75217CW-194 QBXOPG1<br>[EOG/EOG-V] |
| 146 | EI-416782J | IC UPD78014CW-019 QXVPT1 |
| 147 | EI-410125J | IC V53C464AP-80 |
| 148 | EI-403451J | OSC CE CSB1200J 1.200MHZ |
| 149 | EI-403467J | OSC CE CSB500F40 15.680KHZ |
| 150 | EI-368829 | OSC CE CSB512P |
| 151 | EI-414889J | OSC CE CST10.0MTW-TF01 T05 |
| 152 | EI-390687J | OSC CE CSU455PL 455KHZ |
| 153 | EI-367882J1 | OSC CE FCR4.19MC3 4.190MHZ |
| 154 | EI-368825M | OSC X'TAL C-002RX 32.768KHZ |
| 155 | EI-394675J | OSC X'TAL HC-49/U 13875KHZ |
| 156 | EI-389974J | OSC X'TAL HC-49/U 17.734475MHZ |
| 157 | EI-389640N | OSC X'TAL HC-49/U 8000KHZ |
| 158 | EI-394673J | OSC X'TAL HC-49/U 8867.238KHZ |
| 159 | EI-368825 | OSC X'TAL MX-38T 32.768KHZ |
| 160 | EI-381632J | OSC X'TAL 86686 4.433619MHZ |
| 161 | EJ-412291J | TERMINAL LCD (6) B1043 |
| 162 | EM-401077J | IND FL FV496G CHARACTER |
| 163 | EM-408437J | IND LCD LD-B5444A ENGLISH |
| 164 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| 165 | EO-408441J | COIL OSC 1 125-8021-41 70.0KHZ |
| 166 | *EQ-400153J | RELAY POW AG2013 1TR 12V |
| 167 | *ER-328278 | R FUSE H ERD2FC 1/4W 10R0G |
| 168 | *ER-307565 | R FUSE H S10 ERD2FC 1/4W 6R8J |
| 169 | *ER-328519 | R FUSE H S10 ERD2FC 1/4W 68R0G |
| 170 | *ER-331188 | R FUSE H S10 ERD2FC 1/4W 8R2J |
| 171 | *ER-401039J | R FUSE V T05 ERD2FCV 1/4W 4R7J |
| 172 | *ER-400959J | R FUSE V T05 ERD2FCV 1/4W1200G |
| 173 | *ER-400605J | R FUSE V T05 ERD2FCV 1/4W15R0G |
| 174 | *ER-400688J | R FUSE V T05 RF25SCVTP1/4WR10K |
| 175 | *ER-400728J | R FUSE V T05 RF25SCVTP1/4WR12K |
| 176 | *ER-405441J | R FUSE V T05 RF25SCVTP1/4WR27K |
| 177 | *ER-400729J | R FUSE V T05 RF25SCVTP1/4WR47K |
| 178 | *ER-404093J | R FUSE V T05 RF25SCVTP1/4WR56K<br>[EOH/EO/EOG/EOG-V] |
| 179 | *ER-400689J | R FUSE V T05 RF25SCVTP1/4WR68K |
| 180 | *ER-408375J | R FUSE V T05RF25SCPVTP1/4WR12K |
| 181 | ER-403405J | R OMF H S12 FS 1W R75J |
| 182 | ES-373099 | SW LEAF MTS10110MPC1 |
| 183 | ES-387465J | SW MODE SELECT MMS00070ZLBO<br>[SW1] |
| 184 | ES-414811J | SW SLIDE CHIP SSSS21 01-02N |
| 185 | ES-408405J | SW TACT EVQ 235 09K T05 |
| 186 | ES-349474 | SW TACT SKHHAM004A |
| 187 | ES-394558J | SW TACT SKHRAA |
| 188 | ET-411995J | DETECTOR GP1U581X |
| 189 | ET-724885J | TR CHIP RT1N141C<br>[EO/EOG/EOG-V] |
| 190 | ET-713614 | TR CHIP 2SA1235 E,F |
| 191 | ET-725820J | TR CHIP 2SC2735J |
| 192 | ET-413009J | TR CHIP 2SC2884-Y TE12R T12E |
| 193 | ET-356336 | TR DTA114ES |
| 194 | ET-363953 | TR DTA114TS<br>[EM] |
| 195 | ET-354415 | TR DTA144ES |
| 196 | ET-373985 | TR DTA144TS |
| 197 | ET-353897 | TR DTC114ES |
| 198 | ET-360399 | TR DTC114TS |
| 199 | ET-354364 | TR DTC143TS |
| 200 | ET-354414 | TR DTC144ES<br>[EXCEPT EK] |
| 201 | ET-361490 | TR PHOTO PN268<br>[TR1] |
| 202 | ET-390010J | TR PHOTO PT4800<br>[TR2] |
| 203 | ET-390009J | TR PHOTO PT493F<br>[TR4] |
| 204 | ET-364040 | TR UN421D |
| 205 | ET-353899 | TR 2SA1317 S,T,U |
| 206 | ET-389803J | TR 2SA933S R,S |
| 207 | *ET-366365 | TR 2SB1185 E,F |
| 208 | ET-388338J | TR 2SB1425 S,E |
| 209 | *ET-408841J | TR 2SB1565 E,F |
| 210 | ET-356817 | TR 2SB891 Q,R |
| 211 | ET-400218J | TR 2SC1740S R,S |
| 212 | ET-414816J | TR 2SC2668 Y T05 |
| 213 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| 214 | *ET-404195J | TR 2SC4486 S,T T05 |
| 215 | ET-354083 | TR 2SD1189 Q,R |
| 216 | ET-366168 | TR 2SD1292 Q,R<br>[EOG/EOG-V] |
| 217 | *ET-381175J | TR 2SD1856 |
| 218 | *ET-391025J | TR 2SD2012 |
| 219 | ET-405622J | TR 2SD2061 E,F<br>[EOH/EO/EOG/EOG-V] |
| 220 | *ET-408842J | TR 2SD2394 E,F |
| 221 | *ET-411668J | TR 2SD2395 E,F |
| 222 | ET-370819 | TR.CHIP 2SC3052 |
| 223 | EZ-414327J | IND NAME PLATE (1)-E<br>[W202E] |
| 224 | EZ-415490J | IND NAME PLATE (1)-G<br>[W202G] |
| 225 | EZ-417484J | IND NAME PLATE (11)-E |
| 226 | HE-390013J | HEAD E HVFME0020A |
| 227 | HR-405340J | HEAD COMBO HVMZA1121A |
| 228 | HZ-408193J | ROLLER HEAD CLEANER<br>[EXCEPT EK] |
| 229 | MB-387289J | BELT CAPSTAN |
| 230 | MB-414326J | KEY RUBBER |
| 231 | MB-415211J | KEY RUBBER (A7) |
| 232 | MB-415216J | KEY RUBBER (B) |
| 233 | MI-387294J1 | IDLER PART |
| 234 | ML-391745J3 | ARM DAMPER |
| 235 | ML-387350J1 | ARM LID OPENER |
| 236 | ML-387423J | ARM LOADING BRAKE |
| 237 | ML-387277J4 | ARM REVIEW PART |
| 238 | ML-387402J1 | LEVER TRIGGER |
| 239 | ML-387316J | MAIN BRAKE (S) PART |
| 240 | ML-387318J | MAIN BRAKE (T) PART |
| 241 | ML-387321J1 | REVIEW BRAKE PART |
| 242 | ML-387324J1 | SLIDER BRAKE PART |
| 243 | ML-404944J | SLIDER TRIGGER (2) |
| 244 | MP-404852J | PINCH ROLLER (2) PART |
| 245 | MR-387406J | HOLDER THRUST WORM |
| 246 | MR-391968J | PULLEY TRIGGER (2) |
| 247 | MR-407378J1 | ROLLER IMPEDANCE (2) |
| 248 | MT-390954J1 | DISK (2) PART |
| 249 | MT-407370J | DISK (4) PART |
| 250 | MZ-387298J4 | DISK CLUTCH PART |
| 251 | MZ-387331J2 | GEAR CAM SLIDER |
| 252 | MZ-387335J | GEAR EJECT |
| 253 | MZ-387333J1 | GEAR FRONT LOADING |
| 254 | MZ-V1102A090A | GEAR TOGGLE (S) BLK 425EA |
| 255 | MZ-V1102A100A | GEAR TOGGLE (T) BLK 425EA |
| 256 | MZ-387332J | GEAR WORM WHEEL |

## HEAD DRUM BLOCK

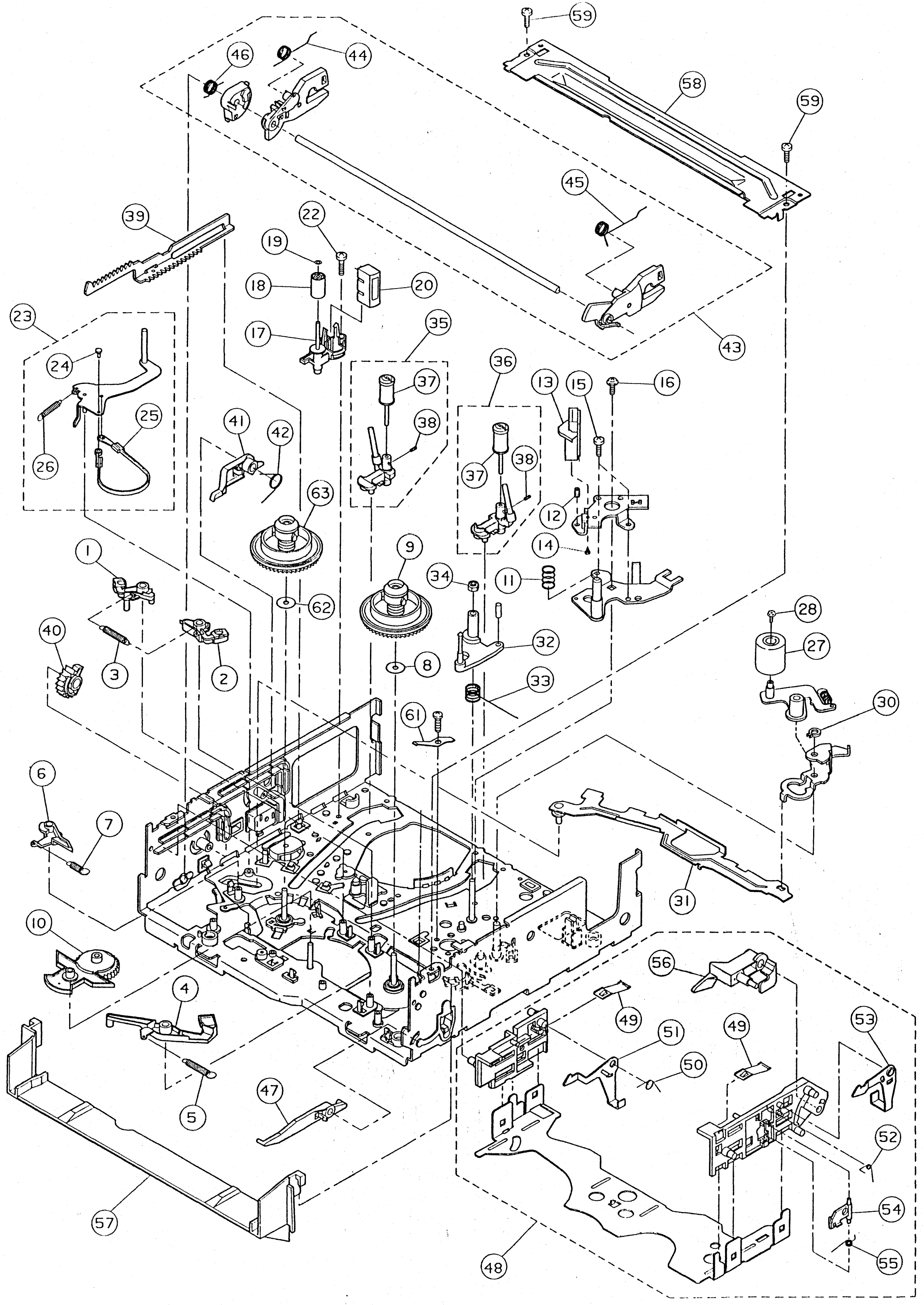


## 2. HEAD DRUM BLOCK

| Ref. | No.Part | No.Description |
|---|---|---|
| 1 | BV-V1123A410A | LOWER DRUM BLK X400EGN |
| 2 | BV-V1123A420A | UPPER DRUM BLK X400EGN |
| 3 | ZS-321298 | BID30X08STL CMT |
| 4 | SZ-387388J | HOLDER FPC |
| 5 | ZS-358936 | ST BID30X06STL CMT |
| 6 | MA-387474J3 | BASE DRUM |
| 7 | ZS-563444 | BID26X08STL CMT |
| 8 | BM-401296J1 | MOTOR E20EL89<br>[DRUM MOTOR] |
| 9 | ZS-467796 | PAN26X12STL CMT |
| 11 | ZS-379350 | PAN30X06STL CMT |
| 12 | ZS-336714 | ST BID30X12STL CMT |
| 13 | VT-401282J | EARTH BRUSH PART AG |
| 14 | ZS-409216J | ST PAN30X07STL CMT C080 |

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

## MECHA BLOCK (1)



## 3. MECHA BLOCK (1)

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | ML-387316J | MAIN BRAKE (S) PART |
| 2 | ML-387318J | MAIN BRAKE (T) PART |
| 3 | ZG-387320J | SP PULL MAIN BRAKE |
| 4 | ML-387321J1 | REVIEW BRAKE PART |
| 5 | ZG-387323J | SP PULL REVIEW BRAKE |
| 6 | ML-387423J | ARM LOADING BRAKE |
| 7 | ZG-387467J | SP PULL LOADING BRAKE |
| 8 | ZW-389814J | PW31X110X050PSL |
| 9 | MT-390954J1 | DISK (2) PART |
| 10 | MI-387294J1 | IDLER PART |
| 11 | ZG-387438J1 | SP PUSH A/C |
| 12 | ZS-410851J | PAN30X070STL CMT CP |
| 13 | HR-405340J | HEAD COMBO HVMZA1121A |
| 14 | ZS-404844J | PAN20X02STL BZN PS1 |
| 15 | ZS-321298 | BID30X08STL CMT |
| 16 | ZS-409216J | ST PAN30X07STL CMT C080 |
| 17 | MZ-407375J1 | HOLDER FE HEAD (2) PART |
| 18 | MR-407378J1 | ROLLER IMPEDANCE (2) |
| 19 | ZW-409602J | SLIT W17X035X025PSL |
| 20 | HE-390013J | HEAD E HVFME0020A |
| 22 | ZS-336714 | ST BID30X12STL CMT |
| 23 | BL-V1102A050A | TENSION ARM BLK 425EA |
| 24 | SZ-407187J2 | HOLDER LEVER TENSION (2) |
| 25 | ML-390768J4 | TENSION BAND PART |
| 26 | ZG-387272J | SP PULL TENSION |
| 27 | MP-404852J | PINCH ROLLER (2) PART |
| 28 | ZS-464703 | BID20X04STL CMT |
| 30 | ZW-332843 | RETAINING RING GRIP 380STL ACP |
| 31 | ML-387431J1 | SLIDER PINCH PART |
| 32 | ML-387277J4 | ARM REVIEW PART |
| 33 | ZG-387282J | SP TORSION REVIEW |
| 34 | ZW-401776J | NUT REVIEW |
| 35 | BV-V1102A070A | LEADER S BLK 425EA |
| 36 | BV-V1102A080A | LEADER T BLK 425EA |
| 37 | VT-387394J1 | GUIDE ROLLER D8 PART |
| 38 | ZS-374458 | 6SET20X030SCM PKR FP |
| 39 | ML-387428J | SLIDER FRONT LOADING |
| 40 | MZ-387335J | GEAR EJECT |
| 41 | ML-391745J3 | ARM DAMPER |
| 42 | ZG-395567J | SP TORSION ARM DAMPER |
| 43 | BL-V1102A140A | ARM LOADING BLK 425EA |
| 44 | ZG-387417J | SP TORSION LOAD (S) |
| 45 | ZG-387418J | SP TORSION LOAD (T) |
| 46 | ZG-392831J | SP TORSION JOINT (2) |
| 47 | ML-387350J1 | ARM LID OPENER |
| 48 | BV-V1102A150A | CASSETTE LOAD BLK 425EA |
| 49 | ZG-387348J1 | SP PLATE HOLDER |
| 50 | ZG-387421J | SP TORSION DAMPER (S) |
| 51 | ML-387345J | LEVER DAMPER (S) |
| 52 | ZG-388290J1 | SP TORSION DAMPER (T) |
| 53 | ML-387346J | LEVER DAMPER (T) |
| 54 | ML-387344J | LEVER LOCK RELEASE |
| 55 | ZG-387420J1 | SP TORSION RELEASE |
| 56 | ML-387349J2 | ARM SHUTTER |
| 57 | SE-395554J1 | GUIDE FRONT (2) |
| 58 | MZ-406134J | PLATE UPPER (2) |
| 59 | ZS-358936 | ST BID30X06STL CMT |
| 61 | ZG-392294J | SP PLATE EARTH |
| 62 | ZW-410733J | PW31X050X050PSL |
| 63 | MT-407370J | DISK (4) PART |
| 64 | BB-V1130A020L | MECHA DECK BLK G20EDG |

NOTE:

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## 4. MECHA BLOCK (2)

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | ML-387324J1 | SLIDER BRAKE PART |
| 2 | ML-404944J | SLIDER TRIGGER (2) |
| 3 | ML-387402J1 | LEVER TRIGGER |
| 4 | ZG-387468J | SP PULL SLIDER |
| 5 | ZG-387403J | SP TORSION COUPLING |
| 6 | ZW-389923J | PW26X060X050PSL |
| 7 | MZ-387298J4 | DISK CLUTCH PART |
| 8 | ZW-387492J | SLIT W21X040X050PSL |
| 9 | BM-400682J3 | MOTOR DFX-67B3VWB2 [CAPSTAN MOTOR] |
| 10 | ZS-365149 | PT BID26X06STL CMT |
| 11 | MB-387289J | BELT CAPSTAN |
| 12 | EA-387496J | PC (#) SENSOR |
| 13 | ED-390011J | D LED GL451 INFRARED [D1] |
| 14 | ED-390012J | D LED GL4800 INFRARED [D2] |
| 15 | EJ-387497J | SOCKET HOUSING 5062-30-10-13 [PS1] |
| 16 | EJ-381837J | SOCKET 174074-5 5P [P1] |
| 17 | ES-387465J | SW MODE SELECT MMS00070ZLBO [SW1] |
| 18 | ET-390010J | TR PHOTO PT4800 [TR2] |
| 19 | ET-390009J | TR PHOTO PT493F [TR4] |
| 20 | EW-389313J | CORD FFC P1.25 L=120 13P [WP1] |
| 21 | MZ-387430J | HOLDER D-LED |
| 22 | MZ-387445J | HOLDER S SENSOR |
| 23 | MZ-387446J | HOLDER PHOTO SENSOR |
| 24 | ET-361490 | TR PHOTO PN268 [TR1] |
| 25 | MZ-V1102A090A | GEAR TOGGLE (S) BLK 425EA |
| 26 | MZ-V1102A100A | GEAR TOGGLE (T) BLK 425EA |
| 27 | ZG-387413J1 | SP PULL TOGGLE |
| 28 | MZ-387332J | GEAR WORM WHEEL |
| 29 | MZ-387331J2 | GEAR CAM SLIDER |
| 30 | MZ-387333J1 | GEAR FRONT LOADING |
| 31 | BM-387503J | MOTOR PART [LOADING MOTOR] |
| 32 | MZ-409537J | GEAR WORM (2) PART |
| 33 | MR-391968J | PULLEY TRIGGER (2) |
| 34 | ZG-387443J | SP TRIGGER |
| 35 | MR-387406J | HOLDER THRUST WORM |
| 36 | ZS-425981 | BID30X03STL CMT |
| 37 | BL-387458J2 | CAPSTAN BRAKE PART |
| 38 | ZG-387502J | SP PULL CAPSTAN BRAKE |
| 39 | ES-373099 | SW LEAF MTS10110MPC1 |
| 40 | ZS-389950J | PT BID26X10STL CMT |
| 41 | ZS-358936 | ST BID30X06STL CMT |
| 42 | ML-387311J2 | ARM COUPLING |
| 43 | ES-408470J | SW MICRO HXW0593-01-100 01-1 [S-SW] |

NOTE:
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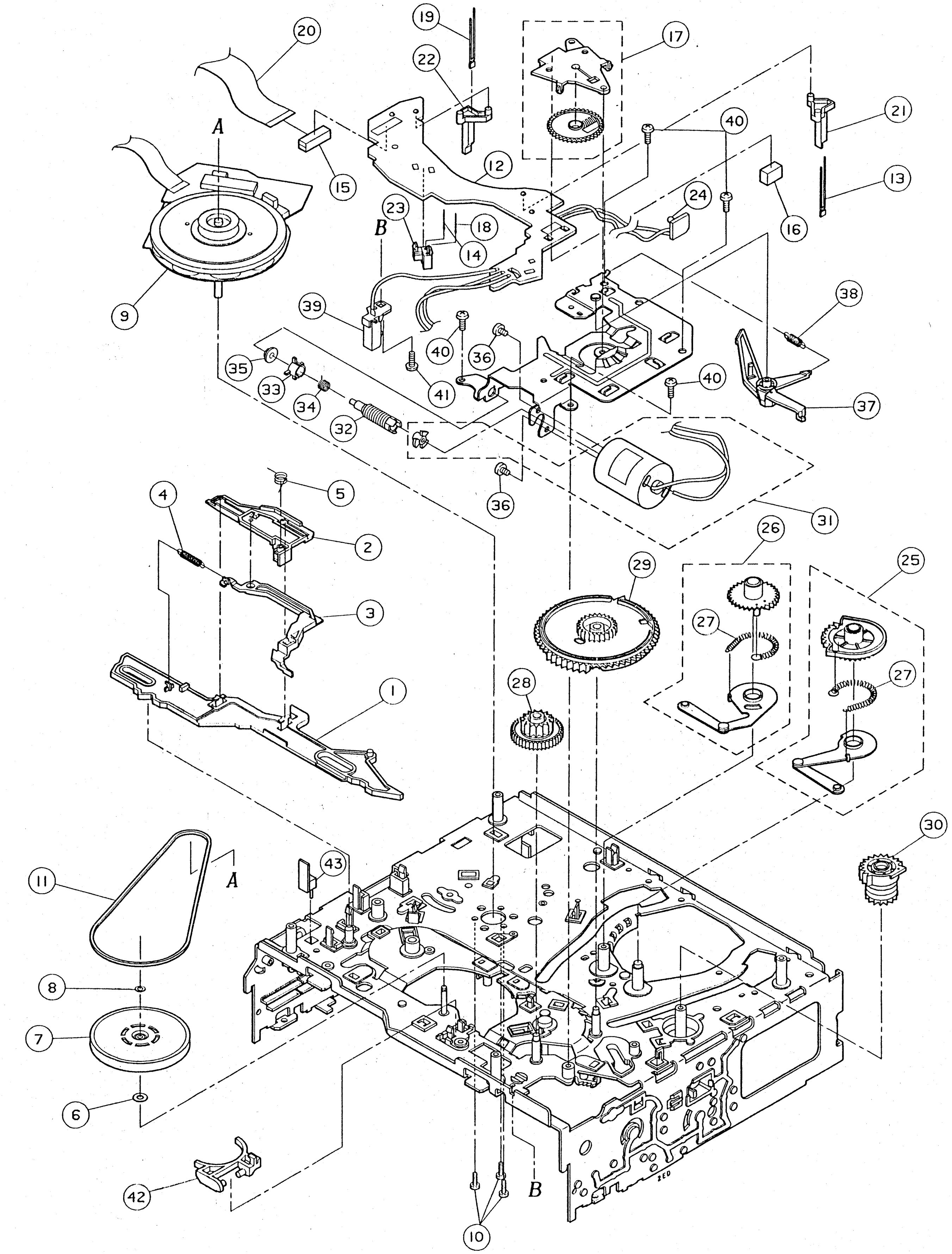
## MECHA BLOCK (2)



## 5. P.C BOARD BLK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1-A | BA-V1164A600A | PC (#) MAIN (PAL) BLK G20EDG |
| 1-B | BA-V1164A600C | PC (#) MAIN (PAL) BLK G20EM |
| 1-C | BA-V1164A600F | PC (#) MAIN (PAL) BLK G20EOH<br>[EOH] |
| 1-D | BA-V1164Q600D | FRPC (#) MAIN (PAL) BLK G20EO/FR |
| 1-E | BA-V1164Q600E | FRPC (#) MAIN (PAL) BLK G24EOG/FR |
| 1-F | BA-V1164Q600G | FRPC (#) MAIN (PAL) BLK G25EOG-V/FR |
| 1-G | BA-V1164Q600B | FRPC (#) MAIN (PAL) BLK G20EK/FR |
| 1-H | BA-V1164Q600H | FRPC (#) MAIN (PAL) BLK G24EK/FR |
| 2-A | BA-V1130A610C | PC PRE AMP BLK F220EDG<br>[EXCEPT EM/EK] |
| 2-B | BA-V1130A610B | PC PRE AMP BLK F220EM<br>[EM] |
| 2-C | BA-V1130A610A | PC PRE AMP BLK F220EA<br>[EK] |
| 3-A | BA-V1164A630A | PC (#) OPERATION (B) BLK G20EDG |
| 3-B | BA-V1164A630C | PC (#) OPERATION (B) BLK G20EM |
| 3-C | BA-V1164A630F | PC (#) OPERATION (B) BLK G20EOH<br>[G20EOH/G21EOH] |
| 3-D | BA-V1164A630G | PC (#) OPERATION (B) BLK G23EOH |
| 3-E | BA-V1164Q630D | FRPC (#) OPERATION (B) BLK G20EO/FR |
| 3-F | BA-V1164Q630E | |
| 3-G | BA-V1164Q630H | FRPC (#) OPERATION (B) BLK G24EOG/FR |
| 3-H | BA-V1164Q630B | FRPC (#) OPERATION (B) BLK G25EOG-V/FR |
| 3-J | BA-V1164Q630J | |
| 4-A | BA-V1164A500C | FRPC (#) OPERATION (B) BLK G20EK/FR |
| 4-B | BA-V1130A510A | FRPC (#) OPERATION (B) BLK G24EK/FR |
| 4-C | BA-V1166A500C | PC (#) POWER EO BLK G20EOH<br>[EOH] |
| 4-D | BA-V1166A500A | PC (#) POWER EO BLK G20EO<br>[EO] |
| 4-E | BA-V1166Q500B | FR PC (#) POWER EO BLK G24EOG/FR<br>[EOG] |
| 4-F | BA-V1161A500B | PC (#) POWER EGN BLK G25EOG-V<br>[EOG-V] |
| 4-G | BA-V1164Q500B | FR PC POWER BLK G20EK/FR<br>[EK] |

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARDS.
- MAIN (A) P.C BOARD
- MAIN (B) P.C BOARD

PC (#) OPERATION BLK CONSISTS OF FOLLOWING P.C BOARDS. (G24EK)
- OPERATION P.C BOARD
- PIN JACK P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARDS. (EOH/EO/EOG)
- POWER P.C BOARD
- DIODE P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARDS. (EM)
- POWER SUPPLY (1) P.C BOARD
- POWER SUPPLY (2) P.C BOARD
- DIODE P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARDS. (EOG-V)
- POWER SUPPLY (1) P.C BOARD
- POWER SUPPLY (2) P.C BOARD

## 6. MAIN (A) P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| C369 | *EC-391843J | C DOUBLE FYD0H223Z 5.5DC |
| D1 | ED-307572 | D SILICON H 1SS131 |
| D2 | ED-307572 | D SILICON H 1SS131 |
| D3 | ED-307572 | D SILICON H 1SS131<br>[EXCEPT EK] |
| D4 | ED-307572 | D SILICON H 1SS131<br>[EXCEPT EK] |
| D6 | ED-403731J | D ZENER H UTZJ8.2C<br>[EOH/EOG/EOG-V] |
| D7 | ED-307572 | D SILICON H 1SS131<br>[EOH/EOG/EOG-V] |
| D8 | ED-387919J | D ZENER H HZS6A1L |
| D9 | ED-307572 | D SILICON H 1SS131<br>[EO/EOG/EOG-V] |
| D10 | ED-307572 | D SILICON H 1SS131<br>[EO/EOG/EOG-V] |
| D12 | ED-405603J | D ZENER H MTZJ10B T26<br>[EOH/EO/EOG/EOG-V] |
| D13 | ED-405604J | D ZENER H MTZJ4.3C T26<br>[EOH/EO/EOG/EOG-V] |
| D50 | ED-307572 | D SILICON H 1SS131<br>[EOH/EOG/EOG-V] |
| D101 | ED-403725J | D ZENER H UTZJ12C<br>[EK] |
| D201 | ED-307572 | D SILICON H 1SS131 |
| D202 | ED-307572 | D SILICON H 1SS131 |
| D203 | ED-307572 | D SILICON H 1SS131 |
| D204 | ED-397233J | D ZENER H HZS5C3 |
| D205 | ED-403267J | D ZENER H MTZJ3.3B T26 |
| D206 | ED-307572 | D SILICON H 1SS131<br>[EOG/EOG-V] |
| D207 | ED-307572 | D SILICON H 1SS131<br>[EOG/EOG-V] |
| D208 | ED-307572 | D SILICON H 1SS131 |
| D209 | ED-307572 | D SILICON H 1SS131 |
| D210 | ED-403726J | D ZENER H UTZJ30B<br>[EOG/EOG-V] |
| D211 | ED-403730J | D ZENER H UTZJ6.2A<br>[EOG/EOG-V] |
| D212 | ED-511907 | D SILICON 1N4002 100/1.0A |
| D213 | ED-511907 | D SILICON 1N4002 100/1.0A |
| D301 | ED-307572 | D SILICON H 1SS131 |
| D302 | ED-307572 | D SILICON H 1SS131 |
| D303 | ED-404086J | D ZENER H UTZJ7.5C |
| D304 | ED-403724J | D ZENER H UTZJ10A |
| D305 | ED-307572 | D SILICON H 1SS131 |
| D306 | ED-307572 | D SILICON H 1SS131 |
| D307 | ED-307572 | D SILICON H 1SS131 |
| D308 | ED-307572 | D SILICON H 1SS131 |
| D309 | ED-307572 | D SILICON H 1SS131 |
| D401 | ED-307572 | D SILICON H 1SS131 |
| D402 | ED-307572 | D SILICON H 1SS131 |
| D403 | ED-307572 | D SILICON H 1SS131<br>[EM] |
| D405 | ED-307572 | D SILICON H 1SS131 |
| D406 | ED-366443 | D SILICON H MA700FA5 F10 |
| D501 | ED-307572 | D SILICON H 1SS131<br>[EXCEPT EK] |
| D502 | ED-307572 | D SILICON H 1SS131 |
| D503 | ED-307572 | D SILICON H 1SS131 |
| D505 | ED-307572 | D SILICON H 1SS131 |
| D506 | ED-307572 | D SILICON H 1SS131 |
| D507 | ED-307572 | D SILICON H 1SS131 |
| D508 | ED-307572 | D SILICON H 1SS131<br>[EXCEPT EK] |
| DL500 | EH-416491J | DL EFDJLA13A |
| DL501 | EH-394838J | DL ADL-FN1344Q<br>[EM] |
| FL1 | EH-394684J | FILTER EMI ZBF503D-00TA T05<br>[EOG-V] |
| FR201 | *ER-400959J | R FUSE V T05 ERD2FCV 1/4W1200G |
| FR202 | *ER-404093J | R FUSE V T05 RF25SCVTP1/4WR56K<br>[EOH/EO/EOG/EOG-V] |
| FR350 | *ER-400729J | R FUSE V T05 RF25SCVTP1/4WR47K |
| FR501 | *ER-404093J | R FUSE V T05 RF25SCVTP1/4WR56K |
| IC1 | EI-389622J | IC L5631 |
| IC101 | EI-310036 | IC TC4066BP |
| IC201 | EI-400756J | IC NJM4558L-B |
| IC301 | EI-414822J1 | IC MN675201A-XDS1 QBXSYP2 |
| IC302 | EI-353421 | IC BA6229 |

| Ref. No. | Part No. | Description |
|---|---|---|
| IC303 | EI-373980 | IC BA15218N |
| IC400 | EI-403234J1 | IC LA7391A |
| IC401 | EI-394856J | IC LC8992 |
| IC402 | EI-373981J1 | IC BA10393N |
| IC403 | EI-356457 | IC BU4013B<br>[EM] |
| L1-A | EO-373260 | COIL FIX 1 LAP02 F05 1R0K<br>[EDG] |
| L1-B | EO-390998J | COIL FIX 1 LAP02 F05 R68K<br>[EK] |
| L101 | EO-345881 | COIL FIX 1 EL0606SKI 101J |
| L103 | EO-356722 | COIL FIX 1 LAP02 F05 6R8K |
| L301 | EO-381196J | COIL FIX 1 EL0405SKI 470K |
| L302 | EO-345881 | COIL FIX 1 EL0606SKI 101J |
| L402 | EO-357508 | COIL FIX 1 LAP02 F05 151K |
| L403 | EO-381192J | COIL FIX 1 EL0405SKI 270K |
| L404 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L405 | EO-354600 | COIL FIX 1 LAP02 F05 101K |
| L410 | EO-345874 | COIL FIX 1 EL0606SKI 330J |
| L470 | EO-356722 | COIL FIX 1 LAP02 F05 6R8K |
| L472 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L474 | EO-388161J | COIL FIX 1 EL0405SKI 560K |
| L480 | EO-403937J | COIL FIX 1 EL0405RA T05 4R7J<br>[EOG/EOG-V] |
| L500 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L501 | EO-353900 | COIL FIX 1 LAP02 F05 150K |
| L502 | EO-345880 | COIL FIX 1 EL0606SKI 820J<br>[EM] |
| L503 | EO-353900 | COIL FIX 1 LAP02 F05 150K<br>[EM] |
| L504 | EO-353900 | COIL FIX 1 LAP02 F05 150K<br>[EM] |
| L505 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L507 | EO-392817J | COIL FIX 1 EL0405SKI 1R2K |
| L508 | EO-403937J | COIL FIX 1 EL0405RA T05 4R7J |
| L509 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L510 | EO-403270J | COIL FIX 1 EL0405RA T05 101J |
| L511 | EO-381195J | COIL FIX 1 EL0405SKI 331K |
| L512 | EO-381197J | COIL FIX 1 EL0405SKI 471K |
| L570 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L590 | EO-387802J | COIL FIX 1 EL0405SKI 330K<br>[EM] |
| MD1-A | BV-403408J | RF CONVERTER MDLK6E753A EDG<br>[EDG] |
| MD1-B | BV-387611J1 | RF CONVERTER YAA21-0808G EV<br>[EM] |
| MD1-C | BV-403409J | RF CONVERTER MDLK6D755A EO<br>[EOH/EO/EOG/EOG-V] |
| MD1-D | BV-403410J | RF CONVERTER MDLK6B733A EK<br>[EK] |
| PJ101 | EJ-387614J | PIN J T6353-ABCB YL BK 4P<br>[EDG/EM] |
| PJ102 | EJ-387613J | SOCKET M1812 21P<br>[EXCEPT EDG/EM] |
| P303 | EJ-388345J | SOCKET HLEM13S-1 13P |
| P304 | EJ-388346J | SOCKET HLEM15S-1 15P |
| P400 | EJ-388345J | SOCKET HLEM13S-1 13P |
| P401 | EJ-394841J | SOCKET HLEM12S-1 12P |
| R214 | ER-403405J | R OMF H S12 FS 1W R75J |
| TR1 | ET-353899 | TR 2SA1317 S,T,U |
| TR2 | ET-414816J | TR 2SC2668 Y T05 |
| TR3 | ET-353899 | TR 2SA1317 S,T,U |
| TR4 | ET-353899 | TR 2SA1317 S,T,U<br>[EXCEPT EK] |
| TR5 | ET-353899 | TR 2SA1317 S,T,U<br>[EXCEPT EK] |
| TR7 | ET-353899 | TR 2SA1317 S,T,U<br>[EXCEPT EK] |
| TR8 | ET-354414 | TR DTC144ES<br>[EXCEPT EK] |
| TR9 | ET-354414 | TR DTC144ES<br>[EXCEPT EK] |
| TR11 | ET-353899 | TR 2SA1317 S,T,U |
| TR12 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR13 | ET-353899 | TR 2SA1317 S,T,U<br>[EXCEPT EDG/EOH/EOG] |
| TR14 | ET-370310 | TR DTC144TS<br>[EOH/EOG] |
| TR15 | ET-353897 | TR DTC114ES |
| TR16 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EOH/EOG/EOG-V] |
| TR17 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR18 | ET-397160J | TR 2SC3330 R,S,T,U,V |

| Ref. No. | Part No. | Description |
|---|---|---|
| TR19 | ET-354414 | TR DTC144ES<br>[EXCEPT EDG] |
| TR20 | ET-405622J | TR 2SD2061 E,F<br>[EOH/EO/EOG/EOG-V] |
| TR101 | ET-354414 | TR DTC144ES |
| TR102 | ET-356336 | TR DTA114ES |
| TR103 | ET-354414 | TR DTC144ES |
| TR104 | ET-353899 | TR 2SA1317 S,T,U |
| TR105 | ET-353899 | TR 2SA1317 S,T,U |
| TR107 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR108 | ET-356336 | TR DTA114ES<br>[EXCEPT EDG/EM] |
| TR109 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR201 | ET-366168 | TR 2SD1292 Q,R<br>[EOG/EOG-V] |
| TR202 | ET-356336 | TR DTA114ES |
| TR203 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR205 | ET-388338J | TR 2SB1425 S,E |
| TR209 | ET-354414 | TR DTC144ES<br>[EOG/EOG-V] |
| TR210 | ET-405622J | TR 2SD2061 E,F |
| TR211 | ET-356336 | TR DTA114ES<br>[EOG/EOG-V] |
| TR301 | ET-354414 | TR DTC144ES |
| TR302 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR303 | ET-363953 | TR DTA114TS<br>[EM] |
| TR304 | ET-354415 | TR DTA144ES |
| TR306 | ET-354414 | TR DTC144ES |
| TR307 | ET-373985 | TR DTA144TS |
| TR308 | ET-373985 | TR DTA144TS |
| TR309 | ET-373985 | TR DTA144TS |
| TR310 | ET-354414 | TR DTC144ES |
| TR312 | ET-354415 | TR DTA144ES |
| TR401 | ET-356336 | TR DTA114ES |
| TR404 | ET-354364 | TR DTC143TS |
| TR406 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR407 | ET-353899 | TR 2SA1317 S,T,U |
| TR408 | ET-354414 | TR DTC144ES |
| TR409 | ET-360399 | TR DTC114TS |
| TR410 | ET-354414 | TR DTC144ES |
| TR414 | ET-388338J | TR 2SB1425 S,E |
| TR415 | ET-353899 | TR 2SA1317 S,T,U |
| TR417 | ET-360399 | TR DTC114TS |
| TR421 | ET-364040 | TR UN421D |
| TR423 | ET-356336 | TR DTA114ES |
| TR425 | ET-354414 | TR DTC144ES<br>[EM] |
| TR470 | ET-353899 | TR 2SA1317 S,T,U |
| TR471 | ET-353899 | TR 2SA1317 S,T,U |
| TR501 | ET-353897 | TR DTC114ES |
| TR502 | ET-360646 | TR DTA143ES<br>[EM] |
| TR503 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR504 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR505 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR506 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR507 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR508 | ET-356336 | TR DTA114ES |
| TR509 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR510 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR511 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR512 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR513 | ET-356336 | TR DTA114ES<br>[EXCEPT EK] |
| TR514 | ET-354414 | TR DTC144ES<br>[EXCEPT EK] |
| TR515 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR570 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR571 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR572 | ET-354414 | TR DTC144ES |
| VR301 | EV-397066J | R S-FIX H T05EVNDXAA03 0.1W333 |
| VR401 | EV-389476J | R S-FIX H T05EVNDXAA03 0.1W103 |
| VR402 | EV-389489J | R S-FIX H T05EVNDXAA03 0.1W472 |
| VR403 | EV-389482J | R S-FIX H T05EVNDXAA03 0.1W682 |
| VR404 | EV-397066J | R S-FIX H T05EVNDXAA03 0.1W333 |
| WF201 | EW-404138J1 | CORD KX MA-POW L=225 12P |
| X301 | EI-389640N | OSC X'TAL HC-49/U 8000KHZ |
| X500 | EI-381632J | OSC X'TAL 86686 4.433619MHZ |

| Ref. No. | Part No. | Description |
|---|---|---|
| 1-A | BV-412399J | VIF UNIT KX-38.9 EDG<br>[EDG] |
| 1-B | BV-403239J1 | VIF UNIT KX EM<br>[EM] |
| 1-C | BV-403240J1 | VIF UNIT KX EOH<br>[EOH] |
| 1-D | BV-403241J1 | VIF UNIT KX EOG<br>[EO] |
| 1-E | BV-416729J | VIF UNIT KX-TEK EOG<br>[EOG/EOG-V] |
| 1-F | BV-403238J1 | VIF UNIT KX EK<br>[EK] |
| 2-A | EE-387603J1 | TV TUNER TERE1-019B EO<br>[EDG] |
| 2-B | EE-405638J | TV TUNER VTSS6CZ EM<br>[EM] |
| 2-C | EE-412395J | TV TUNER ENV-578C9F1 EOH<br>[EOH] |
| 2-D | EE-387604J3 | TV TUNER TERE1-007D EOG<br>[EO] |
| 2-E | EE-416524J | TV TUNER TEKE4-034 EOG<br>[EOG/EOG-V] |
| 2-F | EE-387607J1 | TV TUNER TERB1-008B EK<br>[EK] |
| 3-A | SP-395563J | PANEL REAR JACK EDG (2)<br>[EDG] |
| 3-B | SP-388307J | PANEL REAR JACK EA<br>[EM] |
| 3-C | SP-387357J | PANEL REAR JACK EK<br>[EOH/EO/EK] |
| 3-D | SP-388305J | PANEL REAR JACK EOG<br>[EOG/EOG-V] |

## 7. MAIN (B) P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D601 | ED-307572 | D SILICON H 1SS131 |
| D603 | ED-307572 | D SILICON H 1SS131<br>[EXCEPT EK] |
| D801 | ED-307572 | D SILICON H 1SS131 |
| D802 | ED-386226J | D SCHOTTKY RB100AT-32T26 40/1<br>[EOG/EOG-V] |
| D901 | ED-307572 | D SILICON H 1SS131<br>[G24EK] |
| D902 | ED-307572 | D SILICON H 1SS131<br>[G24EK] |
| FL701 | EH-366894 | FILTER CE SFE-4.16MB 4.16MHZ<br>[EXCEPT EOH/EO/EK] |
| FL801 | EO-408441J | COIL OSC 1 125-8021-41 70.0KHZ |
| IC601 | EI-405722J | IC UPD6450CX-515 |
| IC602 | EI-403469J | IC MM1068XS |
| IC701 | EI-366892 | IC BA7025L<br>[EXCEPT EOH/EO/EK] |
| IC702 | EI-200573 | IC TC4053BP<br>[EM] |
| IC801 | EI-388360J | IC BA7765AS |
| IC902 | EI-310036 | IC TC4066BP<br>[G24EK] |
| L601 | EO-345881 | COIL FIX 1 EL0606SKI 101J<br>[G24EK] |
| L602 | EO-345876 | COIL FIX 1 EL0606SKI 470J |
| L603 | EO-351866 | COIL FIX 1 LAP02 F05 330K<br>[EXCEPT EK] |
| L604 | EO-351866 | COIL FIX 1 LAP02 F05 330K |
| L605 | EO-345881 | COIL FIX 1 EL0606SKI 101J |
| L701 | EO-345881 | COIL FIX 1 EL0606SKI 101J<br>[EXCEPT EOH/EO/EK] |
| L702 | EO-345881 | COIL FIX 1 EL0606SKI 101J<br>[EM] |
| L703 | EO-368129 | COIL FIX 1 TL-8 153J<br>[EXCEPT EOH/EO/EK] |
| L801 | EO-390717J | COIL FIX 1 LHL06TB T05 103J |
| L802 | EO-390716J | COIL FIX 1 LHL06TB T05 272J |
| L850 | EO-397389J | COIL FIX 1 EL0606SKI 4R7J<br>[EOG-V] |
| L901 | EO-345881 | COIL FIX 1 EL0606SKI 101J<br>[G24EK] |
| TR601 | ET-353899 | TR 2SA1317 S,T,U |
| TR602 | ET-354414 | TR DTC144ES |
| TR603 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR604 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EXCEPT EK] |
| TR605 | ET-356336 | TR DTA114ES<br>[EXCEPT EK] |
| TR606 | ET-356336 | TR DTA114ES<br>[EXCEPT EK] |
| TR607 | ET-353899 | TR 2SA1317 S,T,U |
| TR608 | ET-353899 | TR 2SA1317 S,T,U |
| TR609 | ET-354414 | TR DTC144ES<br>[EXCEPT EK] |
| TR701 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EXCEPT EOH/EO/EK] |
| TR702 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EXCEPT EOH/EO/EK] |
| TR751 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR752 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR753 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR754 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[EM] |
| TR801 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR803 | ET-354414 | TR DTC144ES<br>[EM] |
| TR901 | ET-354414 | TR DTC144ES<br>[G24EK] |
| TR902 | ET-354414 | TR DTC144ES<br>[G24EK] |
| TR903 | ET-397160J | TR 2SC3330 R,S,T,U,V<br>[G24EK] |
| TR904 | ET-353899 | TR 2SA1317 S,T,U<br>[G24EK] |
| VR801 | EV-403967J | R S-FIX V T05EVNDCAA03 0.1W332 |
| VR802 | EV-405263J | R S-FIX V T05EVNDCAA03 0.1W104 |
| X601 | EI-389974J | OSC X'TAL HC-49/U 17.734475MHZ |
| X602 | EI-403467J | OSC CE CSB500F40 15.680KHZ |

## 8. PRE AMP P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-307572 | D SILICON H 1SS131 |
| D2 | ED-307572 | D SILICON H 1SS131 |
| IC1 | EI-403250J | IC LA7376 |
| L1 | EO-376858 | COIL FIX 1 LF-5.0S F05 560K |
| L2 | EO-376606 | COIL FIX 1 LF-5.0S F05 180K |
| L3 | EO-381195J | COIL FIX 1 EL0405SKI 331K |
| L4 | EO-376859 | COIL FIX 1 LF-5.0S F05 8R2K |
| L5-A | EO-381191J | COIL FIX 1 EL0405SKI 181K [EK] |
| L5-B | EO-388088J | COIL FIX 1 EL0405SKI 151K [EXCEPT EK] |
| L6 | EO-376612 | COIL FIX 1 LF-5.0S F05 680K |
| L7 | EO-376603 | COIL FIX 1 LF-5.0S F05 150K |
| L8-A | EO-381193J | COIL FIX 1 EL0405SKI 271K [EK] |
| L8-B | EO-387803J | COIL FIX 1 EL0405SKI 221K [EXCEPT EK] |
| L9 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L10 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L13 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L14 | EO-376860 | COIL FIX 1 LF-5.0S F05 820K |
| PS1 | EJ-381075J | SOCKET HOUSING 5062-30-10-12 |
| TR1 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR2 | ET-353899 | TR 2SA1317 S,T,U |
| TR3 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR4 | ET-364040 | TR UN421D |
| TR5 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR6 | ET-353899 | TR 2SA1317 S,T,U |
| TR7 | ET-360399 | TR DTC114TS [EXCEPT EK] |
| TR8 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR9 | ET-360399 | TR DTC114TS [EM] |
| TR10 | ET-364040 | TR UN421D |
| TR11 | ET-354414 | TR DTC144ES [EXCEPT EK] |
| TR12 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR13 | ET-353899 | TR 2SA1317 S,T,U |
| TR14 | ET-353899 | TR 2SA1317 S,T,U |
| TR15 | ET-360399 | TR DTC114TS |
| TR16 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| VR1 | EV-403988J | R S-FIX V T05EVNDCAA03 0.1W102 |
| VR2 | EV-403988J | R S-FIX V T05EVNDCAA03 0.1W102 |
| VR3 | EV-405248J | R S-FIX V T05EVNDCAA03 0.1W471 |
| WP1 | EW-403256J1 | CORD FFC P1.25 L=230 12P |

## 9. OPERATION P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-307572 | D SILICON H 1SS131 [EDG/EM] |
| D2 | ED-307572 | D SILICON H 1SS131 [EK/EM/EOG/EOG-V] |
| D3 | ED-307572 | D SILICON H 1SS131 [EDG] |
| D4 | ED-307572 | D SILICON H 1SS131 [EO] |
| D5 | ED-307572 | D SILICON H 1SS131 [EM] |
| D9 | ED-307572 | D SILICON H 1SS131 [G24EK] |
| D10 | ED-307572 | D SILICON H 1SS131 [EOG/EOG-V] |
| D11 | ED-307572 | D SILICON H 1SS131 [EOG-V] |
| D12 | ED-403279J | D ZENER H UTZJ9.1B |
| D13 | ED-403278J | D ZENER H UTZJ7.5B |
| D14 | ED-307572 | D SILICON H 1SS131 |
| D15 | ED-307572 | D SILICON H 1SS131 |
| D16 | ED-307572 | D SILICON H 1SS131 |
| D17 | ED-401099J | D SCHOTTKY MA719 T26 40/0.5A [EOG/EOG-V] |
| D18 | ED-307572 | D SILICON H 1SS131 |
| D19 | ED-307572 | D SILICON H 1SS131 |
| D20 | ED-307572 | D SILICON H 1SS131 |
| D21 | ED-307572 | D SILICON H 1SS131 |
| D22 | ED-307572 | D SILICON H 1SS131 |
| FL1 | EM-401077J | IND FL FV496G CHARACTER |
| IB1 | EH-403945J | COMP R RGLE9X 103J |
| IB2 | EH-383083J | COMP R RGLE3X 103J |
| IB3 | EH-383056J | COMP R RGLE4X 103J [EOG-V/G24EK] |
| IC1-A | EI-414817J | IC UPD75217CW-185 QBXOPP1 [EXCEPT EOG/EOG-V] |
| IC1-B | EI-416736J | IC UPD75217CW-194 QBXOPG1 [EOG/EOG-V] |
| IC2 | EI-408393J | IC ST24C01B1 |
| IC3 | EI-373955 | IC S-8053ALR |
| L1 | EO-353587 | COIL FIX 1 LAP02 F05 220K |
| L2 | EO-353587 | COIL FIX 1 LAP02 F05 220K |
| PH1 | ET-411995J | DETECTOR GP1U581X |
| P2 | EJ-397357J | SOCKET HLEM13R-1 13P |
| P3 | EJ-414768J | SOCKET HLEM15R-1 15P |
| SW1 | ES-408405J | SW TACT EVQ 235 09K T05 |
| SW2 | ES-349474 | SW TACT SKHHAM004A |
| SW3 | ES-349474 | SW TACT SKHHAM004A |
| SW4 | ES-349474 | SW TACT SKHHAM004A |
| SW5 | ES-349474 | SW TACT SKHHAM004A |
| SW6 | ES-349474 | SW TACT SKHHAM004A |
| SW7 | ES-349474 | SW TACT SKHHAM004A |
| SW8 | ES-349474 | SW TACT SKHHAM004A |
| SW9 | ES-349474 | SW TACT SKHHAM004A |
| SW10 | ES-349474 | SW TACT SKHHAM004A |
| TR1 | ET-354414 | TR DTC144ES |
| X1 | EI-367882J1 | OSC CE FCR4.19MC3 4.190MHZ |
| X2 | EI-368825 | OSC X'TAL MX-38T 32.768KHZ |
| 1 | EW-414866J | CORD FFC BD P1.25 L=130 13P |
| 2 | EW-414864J | CORD FFC BD P1.25 L=110 15P |

## 10. PIN JACK P.C BOARD (G24EK)

| Ref. No. | Part No. | Description |
|---|---|---|
| D23 | ED-307572 | D SILICON H 1SS131 |
| D24 | ED-307572 | D SILICON H 1SS131 |
| PJ1 | EJ-387622J | PIN J JPJ5022-01-010 1P |
| PJ2 | EJ-387623J | PIN J JPJ5022-01-040 1P |

## 11. VIF UNIT (EXCEPT EDG)

| Ref. No. | Part No. | Description |
|---|---|---|
| CF1-A | EH-730625J | FILTER CE SAF38.9MZW70Z [EXCEPT EK] |
| CF1-B | EH-714628 | FILTER SAW SAF39.5MZ70Z [EK] |
| CF2-A | EH-373920 | FILTER CE SFE5.5MB [EXCEPT EK] |
| CF2-B | EH-373921 | FILTER CE SFE6.0MB [EK] |
| CF3-A | EH-368948 | FILTER CE TPS5.5MW 5.5000MHZ [EXCEPT EM/EK] |
| CF3-B | EH-729986J | FILTER CE TPS5.5MB2 [EM] |
| CF3-C | EH-373919 | FILTER CE TPS6.0MB [EK] |
| IC1 | EI-368809 | IC M51496P |
| L1 | EO-387800J | COIL FIX 1 EL0405SKI 2R7K |
| L3-A | EH-733514J | COIL SIF DET 6F16437A1 [EXCEPT EK] |
| L3-B | EO-732831J | COIL SIF DET 6F16437A2 [EK] |
| L4 | EO-732832J | COIL AFT 6F16435A1 |
| L5 | EO-732833J | COIL TANK 7KL 6F16436A1 |
| L6-A | EO-387799J | COIL FIX 1 EL0405SKI 180K [EXCEPT EK] |
| L6-B | EO-387798J | COIL FIX 1 EL0405SKI 150K [EK] |
| L7-A | EO-387799J | COIL FIX 1 EL0405SKI 180K [EXCEPT EK] |
| L7-B | EO-387798J | COIL FIX 1 EL0405SKI 150K [EK] |
| L8 | EO-387802J | COIL FIX 1 EL0405SKI 330K |
| L51 | EO-725964J | COIL TRAP 6F16222A1 [EO/EOG/EOG-V] |
| L52 | EO-725965J | COIL TRAP 6F16223A1 [EO/EOG/EOG-V] |
| Q1 | ET-725820J | TR CHIP 2SC2735J |
| Q2 | ET-713614 | TR CHIP 2SA1235 E.F |
| Q51 | ET-724885J | TR CHIP RT1N141C [EO/EOG/EOG-V] |
| Q52 | ET-724885J | TR CHIP RT1N141C [EO/EOG/EOG-V] |
| VR2 | EV-396023J | R S-FIX H T05EVNDXAA03 0.1W222 |
| VR51 | EV-389479J | R S-FIX H T05EVNDXAA03 0.1W223 |
| VR52 | EV-389479J | R S-FIX H T05EVNDXAA03 0.1W223 [EO/EOG/EOG-V] |

## 12. VIF UNIT (EDG)

| Ref. No. | Part No. | Description |
|---|---|---|
| CF1 | EH-394874J | FILTER CE SAF38.9MZA70Z |
| CF2 | EH-376338 | FILTER CE TPS6.5MB |
| CF3 | EH-368948 | FILTER CE TPS5.5MW 5.5000MHZ |
| CF4 | EH-373918 | FILTER CE TPS5.5MB |
| CF51 | EH-412432J | FILTER CE SFSH6.5MDB 6.500MHZ |
| CF52 | EH-368827 | FILTER CE SFS5.5MD 5.500MHZ |
| CF53 | EH-373921 | FILTER CE SFE6.0MB |
| IC1 | EI-368809 | IC M51496P |
| L1 | EO-387782J | COIL FIX 1 EL0405SKI 2R2K |
| L2 | EO-732831J | COIL SIF DET 6F16437A2 |
| L3 | EO-732832J | COIL AFT 6F16435A1 |
| L4 | EO-732833J | COIL TANK 7KL 6F16436A1 |
| L5 | EO-397238J | COIL FIX 1 EL0405SKI 6R8K |
| L6 | EO-387798J | COIL FIX 1 EL0405SKI 150K |
| L51 | EO-396361J | COIL FIX 1 EL0405SKI 8R2K |
| L52 | EO-387803J | COIL FIX 1 EL0405SKI 221K |
| Q1 | ET-725820J | TR CHIP 2SC2735J |
| Q2 | ET-713614 | TR CHIP 2SA1235 E.F |
| Q3 | ET-370819 | TR.CHIP 2SC3052 |
| Q4 | ET-713614 | TR CHIP 2SA1235 E.F |
| Q51 | ET-370819 | TR.CHIP 2SC3052 |
| Q52 | ET-370819 | TR.CHIP 2SC3052 |
| VR1 | EV-389479J | R S-FIX H T05EVNDXAA03 0.1W223 |
| VR2 | EV-396023J | R S-FIX H T05EVNDXAA03 0.1W222 |
| X51 | EI-368829 | OSC CE CSB512P |

## 13. POWER P.C BOARD (EXCEPT EM/EOG-V)

| Ref. No. | Part No. | Description |
|---|---|---|
| C1 | EC-414869J | C EC V CUT GXB12 222M 25.0DC |
| C2 | EC-411667J | C EC V CUT GXB16 472M 16.0DC |
| C3 | EC-414870J | C EC V CUT GXB16 222M 35.0DC |
| C4 | EC-414878J | C EC V CUT LLA 470M 100.0DC |
| C5 | EC-414878J | C EC V CUT LLA 470M 100.0DC |
| D1 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D2 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D3 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D4 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D5 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D6 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D7 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D8 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D9 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D10 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D11 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D12 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D13 | ED-397319J | D ZENER H HZS15-2 |
| D14 | ED-408912J | D ZENER H HZS36-3 |
| D15 | ED-402230J | D ZENER H HZS36-1 |
| D17 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D18 | *ED-511907 | D SILICON 1N4002 100/1.0A [EDG/EK] |
| D19 | ED-307572 | D SILICON H 1SS131 |
| D20 | ED-307572 | D SILICON H 1SS131 |
| D21 | ED-307572 | D SILICON H 1SS131 |
| D22-A | ED-402204J | D ZENER H HZS11A3 [EDG/EK] |
| D22-B | ED-396058J | D ZENER H HZS12B3 [EOH/EO/EOG] |
| D23 | ED-403743J | D ZENER H HZS6B3 |
| FL1 | EO-339907 | COIL LF FKOB160MH16 1000.0UH [EOG] |
| FR1 | *ER-408375J | R FUSE V T05RF25SCPVTP1/4WR12K |
| FR2 | *ER-400728J | R FUSE V T05 RF25SCVTP1/4WR12K |
| FR3 | *ER-408375J | R FUSE V T05RF25SCPVTP1/4WR12K |
| FR4 | *ER-328519 | R FUSE H S10 ERD2FC 1/4W 68R0G |
| FR5 | *ER-400605J | R FUSE V T05 ERD2FCV 1/4W15R0G |
| TR1 | *ET-381175J | TR 2SD1856 |
| TR2 | *ET-408842J | TR 2SD2394 E,F |
| TR3 | *ET-408842J | TR 2SD2394 E,F |
| TR4 | *ET-411668J | TR 2SD2395 E,F |
| TR5 | *ET-408841J | TR 2SB1565 E,F |
| TR6 | *ET-388338J | TR 2SB1425 S,E |
| TR7 | *ET-397160J | TR 2SC3330 R,S,T,U,V |

## 14. DIODE P.C BOARD (EOH/EO/EOG)

| Ref. No. | Part No. | Description |
|---|---|---|
| D24 | *ED-379298 | D SILICON DBA20B 100/2.0A |

## 15. POWER SUPPLY (1) P.C BOARD (EM)

| Ref. No. | Part No. | Description |
|---|---|---|
| C1 | EC-408376J | C EC V CUT KMG 102M 50.0DC |
| C2 | EC-410530J | C EC V CUT KMG 332M 50.0DC |
| C3 | EC-408426J | C EC V F05 LXF8 121M 50.0DC |
| C4 | EC-403878J | C EC V T05 LXF8 271M 16.0DC |
| C14 | EC-408426J | C EC V F05 LXF8 121M 50.0DC |
| C15 | EC-403878J | C EC V T05 LXF8 271M 16.0DC |
| C20 | EC-403371J | C EC V F05 LXF8 221M 25.0DC |
| C23 | EC-404197J | C EC V T05 SXE8 330M 80.0DC |
| C24 | EC-404197J | C EC V T05 SXE8 330M 80.0DC |
| C101 | *EC-389414J | C CE V DE7090 B102K 400AC |
| D3 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D4 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D6 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D8 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D11 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D16 | ED-307572 | D SILICON H 1SS131 |
| D17 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D18 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D19 | ED-404032J | D ZENER H UTZJ39A |
| D20 | ED-405524J | D ZENER H MTZJ36A T26 |
| D27 | ED-404387J | D ZENER H HZS16-1 |
| D28 | ED-391005J | D ZENER H HZS12B1 |
| D54 | ED-307572 | D SILICON H 1SS131 |
| D55 | ED-307572 | D SILICON H 1SS131 |
| D57 | ED-307572 | D SILICON H 1SS131 |
| D58 | ED-405264J | D ZENER H UTZJ10C |
| D71 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D72 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D73 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D74 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D101 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D102 | ED-403947J | D ZENER H UTZJ22C T26 |
| D103 | ED-307572 | D SILICON H 1SS131 |
| D104 | ED-404031J | D ZENER H UTZJ11B T26 |
| D106 | ED-401046J | D SILICON RL104F-E T26 400/1A |
| D107 | ED-403948J | D ZENER H UTZJ16C T26 |
| D108 | ED-405265J | D ZENER H UTZJ36C |
| D109 | ED-405265J | D ZENER H UTZJ36C |
| F101 | *EF-413079J | FUSE S505 T 250V 1.00A |
| FR1 | *ER-400728J | R FUSE V T05 RF25SCVTP1/4WR12K |
| FR2 | *ER-408375J | R FUSE V T05RF25SCPVTP1/4WR12K |
| FR3 | *ER-400605J | R FUSE V T05 ERD2FCV 1/4W15R0G |
| FR4 | *ER-400689J | R FUSE V T05 RF25SCVTP1/4WR68K |
| FR5 | *ER-405441J | R FUSE V T05 RF25SCVTP1/4WR27K |
| FR102 | *ER-401039J | R FUSE V T05 ERD2FCV 1/4W 4R7J |
| L1 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L2 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L3 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L4 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L6 | EO-386541J | COIL FIX 1 ELF1010SKI 101K |
| L9 | EO-410254J | COIL FIX 1 LHL06TB T05 681K |
| RL101 | *EQ-400153J | RELAY POW AG2013 1TR 12V |
| TR1 | *ET-366365 | TR 2SB1185 E,F |
| TR5 | *ET-366365 | TR 2SB1185 E,F |
| TR6 | ET-356817 | TR 2SB891 Q,R |
| TR9 | *ET-366365 | TR 2SB1185 E,F |
| TR12 | *ET-405622J | TR 2SD2061 E,F |
| TR13 | *ET-366365 | TR 2SB1185 E,F |
| TR14 | ET-360399 | TR DTC114TS |
| TR15 | ET-360399 | TR DTC114TS |
| TR16 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR101 | ET-389803J | TR 2SA933S R,S |
| TR102 | ET-400218J | TR 2SC1740S R,S |
| TR103 | ET-366168 | TR 2SD1292 Q,R |
| TR104 | ET-366365 | TR 2SB1185 E,F |
| TR106 | ET-389803J | TR 2SA933S R,S |
| TR107 | *ET-404195J | TR 2SC4486 S,T T05 |

## 16. POWER SUPPLY (2) P.C BOARD (EM)

| Ref. No. | Part No. | Description |
|---|---|---|
| D7 | ED-405264J | D ZENER H UTZJ10C |
| D10 | ED-307572 | D SILICON H 1SS131 |
| D50 | ED-403732J | D ZENER H UTZJ5.6A |
| D56 | ED-410359J | D ZENER H HZS15-1 T26 |
| IC1 | *EI-381575J | IC BA6121 |
| L10 | EO-380091J1 | COIL FIX 2 C-5293-01 560K |
| TR2 | *ET-405622J | TR 2SD2061 E,F |
| TR3 | ET-389803J | TR 2SA933S R,S |
| TR4 | *ET-366168 | TR 2SD1292 Q,R |
| TR7 | *ET-405622J | TR 2SD2061 E,F |
| TR8 | ET-389803J | TR 2SA933S R,S |
| TR50 | ET-353897 | TR DTC114ES |

## 17. DIODE P.C BOARD (EM)

| Ref. No. | Part No. | Description |
|---|---|---|
| D60 | *ED-379298 | D SILICON DBA20B 100/2.0A |

## 18. POWER SUPPLY (1) P.C B0ARD (EOG-V)

| Ref. No. | Part No. | Description |
|---|---|---|
| C1 | EC-404196J | C EC V SXE12 102M 35.0DC |
| C2 | EC-406635J | C EC V SXE16 222M 35.0DC |
| C4 | EC-405269J | C EC V F05 LXF8 121M 35.0DC |
| C14 | EC-405269J | C EC V F05 LXF8 121M 35.0DC |
| C15 | EC-405269J | C EC V F05 LXF8 121M 35.0DC |
| C20 | EC-403371J | C EC V F05 LXF8 221M 25.0DC |
| C23 | EC-412318J | C EC V T05 LXA8 330M 63.0DC |
| C24 | EC-412136J | C EC V F05 LXF8 820M 63.0DC |
| C73 | EC-403285J | C EC V T05 LXF6 121M 25.0DC |
| D1 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D2 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D3 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D4 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D6 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D8 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D11 | *ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D16 | ED-366684 | D SILICON H 1SS136 F05 |
| D17 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D18 | *ED-412107J | D SILICON 1N4003 T26 200/1.0A |
| D19 | ED-404032J | D ZENER H UTZJ39A |
| D20 | ED-404033J | D ZENER H UTZJ33B |
| D27 | ED-403265J | D ZENER H UTZJ15A T26 |
| D30 | ED-412105J | D ZENER H HZS5B1 T26 |
| D32 | ED-307572 | D SILICON H 1SS131 |
| D71 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D72 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D73 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D74 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D75 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D76 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D77 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D78 | *ED-511907 | D SILICON 1N4002 100/1.0A |
| D80 | ED-403267J | D ZENER H MTZJ3.3B T26 |
| D82 | ED-403279J | D ZENER H UTZJ9.1B |
| D83 | ED-386226J | D SCHOTTKY RB100AT-32T26 40/1 |
| D88 | ED-307572 | D SILICON H 1SS131 |
| D89 | ED-307572 | D SILICON H 1SS131 |
| FL1 | EO-339907 | COIL LF FKOB160MH16 1000.0UH |
| FR1 | *ER-400728J | R FUSE V T05 RF25SCVTP1/4WR12K |
| FR2 | *ER-400688J | R FUSE V T05 RF25SCVTP1/4WR10K |
| FR3 | *ER-328278 | R FUSE H ERD2FC 1/4W 10R0G |
| FR4 | *ER-307565 | R FUSE H S10 ERD2FC 1/4W 6R8J |
| FR5 | *ER-405441J | R FUSE V T05 RF25SCVTP1/4WR27K |
| L1 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L2 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L3 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L4 | EO-408381J | COIL FIX 2 C-5344-40 560K |
| L6 | EO-386541J | COIL FIX 1 ELF1010SKI 101K |
| L9 | EO-410254J | COIL FIX 1 LHL06TB T05 681K |
| R78 | *ER-368461 | R OMF H S12 FS 1W R22J |
| TR1 | *ET-366365 | TR 2SB1185 E,F |
| TR5 | *ET-366365 | TR 2SB1185 E,F |
| TR6 | ET-356817 | TR 2SB891 Q,R |

| Ref. No. | Part No. | Description |
|---|---|---|
| TR7 | *ET-391025J | TR 2SD2012 |
| TR9 | *ET-366365 | TR 2SB1185 E,F |
| TR12 | *ET-408842J | TR 2SD2394 E,F |
| TR13 | *ET-366365 | TR 2SB1185 E,F |
| TR14 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR15 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR16 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR71 | ET-353897 | TR DTC114ES |
| TR72 | ET-353897 | TR DTC114ES |
| TR75 | ET-354083 | TR 2SD1189 Q,R |

## 19. POWER SUPPLY (2) P.C BOARD (EOG-V)

| Ref. No. | Part No. | Description |
|---|---|---|
| C25 | EC-408426J | C EC V F05 LXF8 121M 50.0DC |
| D31 | ED-307572 | D SILICON H 1SS131 |
| D84 | ED-307572 | D SILICON H 1SS131 |
| D85 | ED-307572 | D SILICON H 1SS131 |
| D87 | ED-403267J | D ZENER H MTZJ3.3B T26 |
| IC1 | *EI-381575J | IC BA6121 |
| L10 | EO-380091J1 | COIL FIX 2 C-5293-01 560K |
| R77 | *ER-368461 | R OMF H S12 FS 1W R22J |
| TR2 | *ET-391025J | TR 2SD2012 |
| TR3 | ET-389803J | TR 2SA933S R,S |
| TR8 | ET-389803J | TR 2SA933S R,S |
| TR73 | *ET-391025J | TR 2SD2012 |

## 20. VPS P.C BOARD (EOG)

| Ref. No. | Part No. | Description |
|---|---|---|
| C601 | EC-366613 | C EC V CUT SME 102M 25.0DC |
| D1 | ED-307572 | D SILICON H 1SS131 |
| D601 | ED-307572 | D SILICON H 1SS131 |
| D602 | ED-405446J | D ZENER H UTZJ5.6B T26 |
| FR601 | *ER-331188 | R FUSE H S10 ERD2FC 1/4W 8R2J |
| IB401 | EH-386637J | COMP R RGLE8X 103J |
| IC301 | EI-385958J | IC SAA4700 |
| IC401 | EI-408430J1 | IC UPD75004CU-148 JXVPS2 |
| L1 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L301 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L401 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| TR1 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR601 | ET-354083 | TR 2SD1189 Q,R |
| X401 | EI-367882J1 | OSC CE FCR4.19MC3 4.190MHZ |

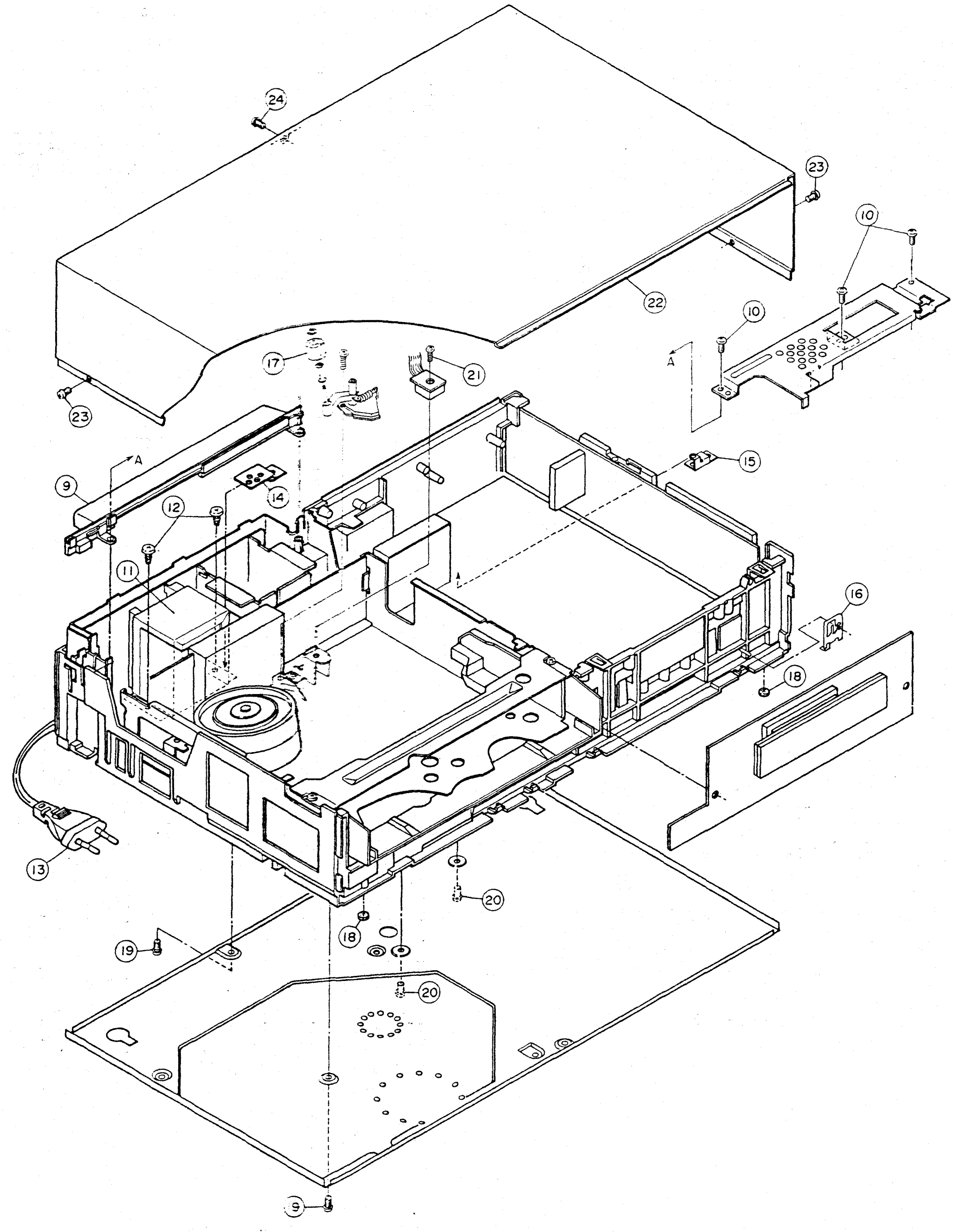
## 21. VPST P.C BOARD (EOG-V)

| Ref. No. | Part No. | Description |
|---|---|---|
| C601 | EC-366613 | C EC V CUT SME 102M 25.0DC |
| D1 | ED-307572 | D SILICON H 1SS131 |
| D201 | ED-307572 | D SILICON H 1SS131 |
| D601 | ED-307572 | D SILICON H 1SS131 |
| D602 | ED-405446J | D ZENER H UTZJ5.6B T26 |
| FL101 | EH-394684J | FILTER EMI ZBF503D-00TA T05 |
| FR601 | *ER-331188 | R FUSE H S10 ERD2FC 1/4W 8R2J |
| IB101 | EH-383056J | COMP R RGLE4X 103J |
| IC101 | EI-416782J | IC UPD78014CW-019 QXVPT1 |
| IC102 | EI-410265J | IC ST24C04B1 |
| IC103 | EI-405224J | IC ST24C02AB1/AAB |
| IC104 | EI-414884J | IC CF72307 |
| IC105 | EI-410125J | IC V53C464AP-80 |
| IC106 | EI-401050J | IC LVA523SA2 |
| IC107 | EI-394680J | IC AN3171K |
| IC108 | EI-387019J | IC MC1377P |
| IC109 | EI-414885J | IC CF72306 |
| IC301 | EI-385958J | IC SAA4700 |
| L2 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L3 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L4 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L5 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L6 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L121 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L151 | EO-410104J | COIL FIX 1 SPT0203SA T26 181J |
| L152 | EO-410104J | COIL FIX 1 SPT0203SA T26 181J |
| L153 | EO-345880 | COIL FIX 1 EL0606SKI 820J |
| L154 | EO-410099J | COIL FIX 1 SPT0203SA T26 470J |
| L155 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L201 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L202 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L203 | EO-345875 | COIL FIX 1 EL0606SKI 390J |
| L204 | EO-345873 | COIL FIX 1 EL0606SKI 270J |
| L206 | EO-345871 | COIL FIX 1 EL0606SKI 180J |
| L207 | EO-345874 | COIL FIX 1 EL0606SKI 330J |
| L208 | EO-345874 | COIL FIX 1 EL0606SKI 330J |
| L301 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L302 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| TR1 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR4 | ET-354415 | TR DTA144ES |
| TR151 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR152 | ET-353899 | TR 2SA1317 S,T,U |
| TR153 | ET-353899 | TR 2SA1317 S,T,U |
| TR154 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR155 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR201 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR202 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR203 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR204 | ET-353899 | TR 2SA1317 S,T,U |
| TR208 | ET-353899 | TR 2SA1317 S,T,U |
| TR601 | ET-354083 | TR 2SD1189 Q,R |
| X101 | EI-414889J | OSC CE CST10.0MTW-TF01 T05 |
| X102 | EI-394675J | OSC X'TAL HC-49/U 13875KHZ |
| X103 | EI-394673J | OSC X'TAL HC-49/U 8867.238KHZ |

## 22. SUB P.C BOARD (EM)

| Ref. No. | Part No. | Description |
|---|---|---|
| C1 | EC-365397 | C EC V CUT SME 332M 10.0DC |
| C2 | EC-365397 | C EC V CUT SME 332M 10.0DC |
| D1 | ED-401099J | D SCHOTTKY MA719 T26 40/0.5A |
| D2 | ED-401099J | D SCHOTTKY MA719 T26 40/0.5A |
| D3 | ED-403267J | D ZENER H MTZJ3.3B T26 |
| TR1 | ET-366365 | TR 2SB1185 E,F |
| TR2 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR3 | ET-397160J | TR 2SC3330 R,S,T,U,V |

## FINAL ASSEMBLY



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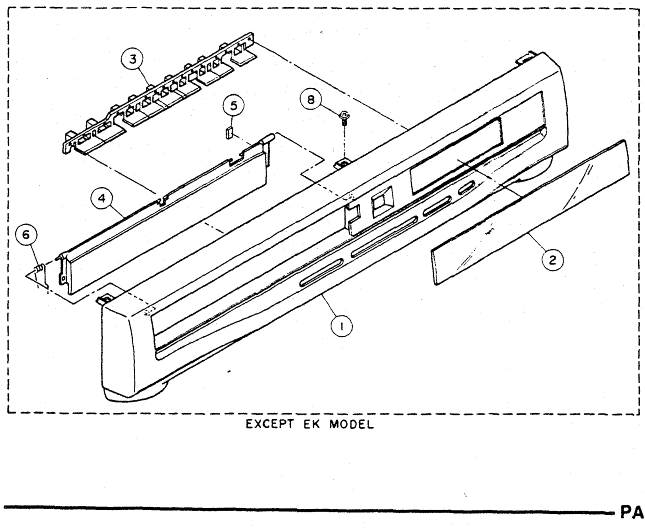

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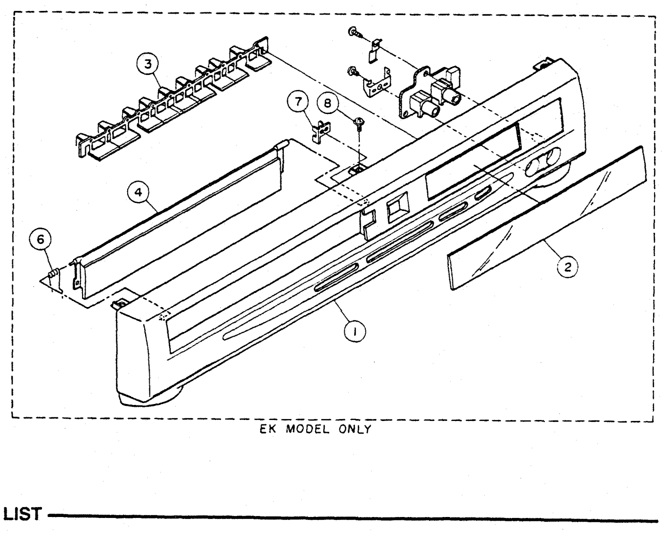


EK MODEL ONLY

## 23. FINAL ASSEMBLY

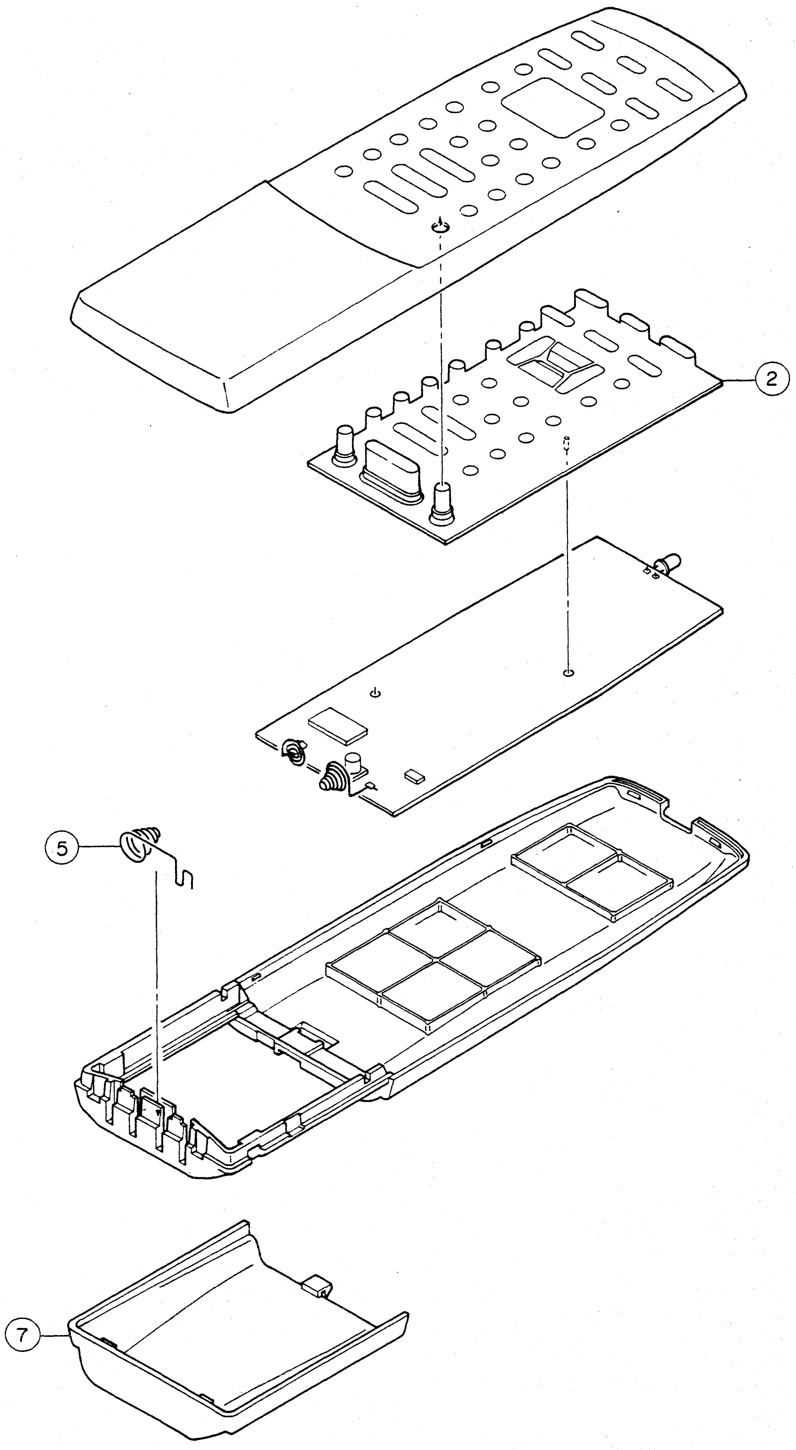
| Ref. No. | Part No. | Description |
|---|---|---|
| 1-A | SP-415654J | PANEL FRONT (C) E<br>[EXCEPT EOG/EOG-V/G24EK] |
| 1-B | SP-415838J | PANEL FRONT (C) G<br>[EOG/EOG-V] |
| 1-C | SP-415485E | PANEL FRONT (B) E (FR)<br>[G24EK] |
| 2-A | SE-415816J | WINDOW FLD (C) 2<br>[EDG] |
| 2-B | SE-415825J | WINDOW FLD (C) 3<br>[EM] |
| 2-C | SE-415651J | WINDOW FLD (C)<br>[EO/EOH/G20EK] |
| 2-D | SE-415834J | WINDOW FLD (C) 4<br>[EOG] |
| 2-E | SE-416168J | WINDOW FLD (C) 7<br>[EOG-V] |
| 2-F | SE-416260E | WINDOW FLD (C) 8 (FR)<br>[G24EK] |
| 3-A | SB-415652J | BUTTON OP (C)<br>[EXCEPT G24EK] |
| 3-B | SB-415483E | BUTTON OP (FR)<br>[G24EK] |
| 4-A | SE-415829J | MASK CASSETTE VS-G20 (E1)<br>[EDG/G20EK] |
| 4-B | SE-415832J | MASK CASSETTE VS-G20 (E2)<br>[EM] |
| 4-C | SE-415835J | MASK CASSETTE VS-G20 (E3)<br>[G20EOH] |
| 4-D | SE-415836J | MASK CASSETTE VS-G21 (E)<br>[G21EOH] |
| 4-E | SE-415837J | MASK CASSETTE VS-G23 (E)<br>[G23EOH] |
| 4-F | SE-415831J | MASK CASSETTE VS-G20EO<br>[EO] |
| 4-G | SE-415839J | MASK CASSETTE VS-G24 (G)<br>[EOG] |
| 4-H | SE-415841J | MASK CASSETTE VS-G25 (G)<br>[EOG-V] |
| 4-J | SE-416167E | MASK CASSETTE VS-G24 (E) (FR)<br>[G24EK] |
| 5 | SZ-407193J | CUSHION MASK (2) |
| 6 | ZG-387370J | SP MASK |
| 7 | SZ-401874J | STOPPER MASK<br>[G24EK] |
| 8 | ZS-357946 | PLX PAN30X10STL CMT C080 |
| 9 | SC-387353J | COVER TRANS |
| 10 | ZS-378341 | PLX BID30X12STL CMT |
| 11-A | *BT-410491J | TRANS POW V1130 EDG<br>[EDG] |
| 11-B | *BT-410488J | TRANS POW V1130 EM<br>[EM] |
| 11-C | *BT-403873J | TRANS POW V1130 EO<br>[EOH/EO/EOG] |
| 11-D | *BT-410606J | TRANS POW V1146 EOG-V<br>[EOG-V] |
| 11-E | *BT-416855J | TRANS POW V1164 EA<br>[EK] |
| 12 | ZS-373962 | PLX BID40X10STL CMT |
| 13-A | EW-404002M | AC CORD 200 SE-1 WITH TUBE E<br>[EXCEPT EK] |
| 13-B | EW-414845E | AC CORD 200 V1164 WITH TUBE B<br>[EK] |
| 14 | ZG-387505J | PLATE EARTH |
| 15 | ZG-387354J | PLATE EARTH (2) |
| 16 | ZG-392214J1 | PLATE EARTH (3) |
| 17 | HZ-408193J | ROLLER HEAD CLEANER<br>[EXCEPT EK] |
| 18 | SA-387507J | FOOT SX |
| 19 | ZS-358936 | ST BID30X06STL CMT |
| 20 | ZS-362378 | PLX BID30X10STL CMT |
| 21 | ZS-393459J | DT BID26X10STL CMT |
| 22 | SP-407479J | COVER UPPER JX |
| 23 | ZS-385611J | DT BID26X06STL BNI |
| 24 | ZS-391046J | PLX BID26X10STL BNI |

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

## 24. ACCESSARY

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | EW-348414 | CORD PAL |
| 2-A | AV-B1038A010A | REMOCON BLK RC-V250E<br>[EXCEPT EOG/G23EOH/EOG-V/G24EK] |
| 2-B | AV-B1050A010D | REMOCON BLK RC-W202G<br>[EOG] |
| 2-C | AV-B1050A010A | REMOCON BLK RC-W202E<br>[G23EOH] |
| 2-D | AV-B1051A010B | REMOCON BLK RC-W201G<br>[EOG-V] |
| 2-E | AV-B1065A010A | REMOCON BLK RC-W212E<br>[G24EK] |

## REMOCON RC-V250E



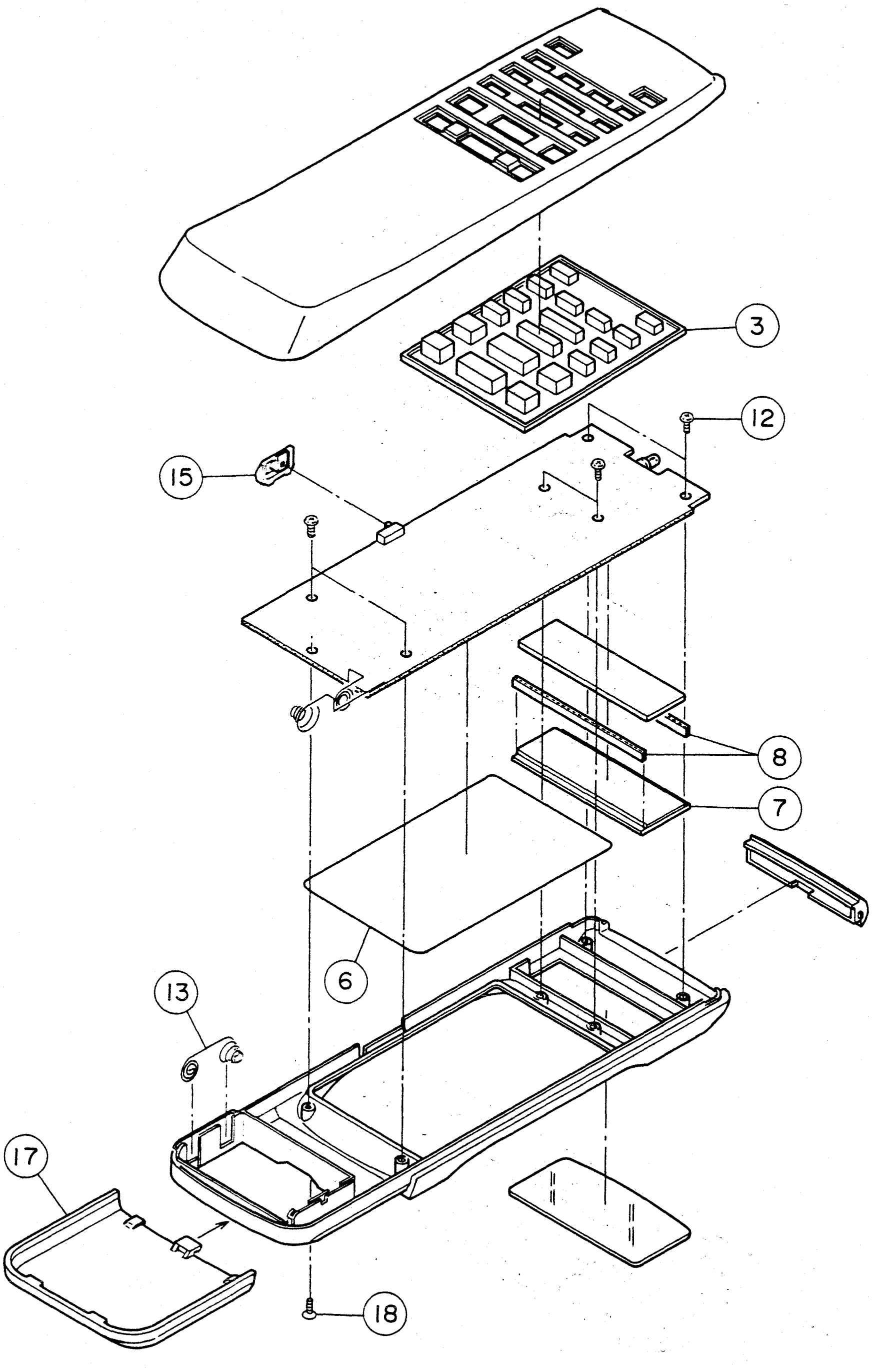
### 25. REMOCON RC-V250E

| Ref. No. | Part No. | Description |
|---|---|---|
| 2 | MB-407424J1 | KEY RUBBER |
| 5 | ZG-406719J | TERMINAL BATTERY (A3) |
| 7 | SC-407425J | COVER BATTERY |

### 26. REMOCON P.C BOARD RC-V250

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-403450J | D LED SE303ARF-C INFRARED |
| D2 | ED-386031J | D SILICON CHIP MA110-TW |
| D3 | ED-386031J | D SILICON CHIP MA110-TW |
| D4 | ED-386031J | D SILICON CHIP MA110-TW |
| IC1 | EI-376112 | IC UPD6122G |
| TR1 | ET-413009J | TR CHIP 2SC2884-Y TE12R T12E |
| X1 | EI-390687J | OSC CE CSU455PL 455KHZ |
| 1 | ZG-406720J | TERMINAL BATTERY (A1) |
| 2 | ZG-406722J | TERMINAL BATTERY (A2) |

## REMOCON RC-W202E/G



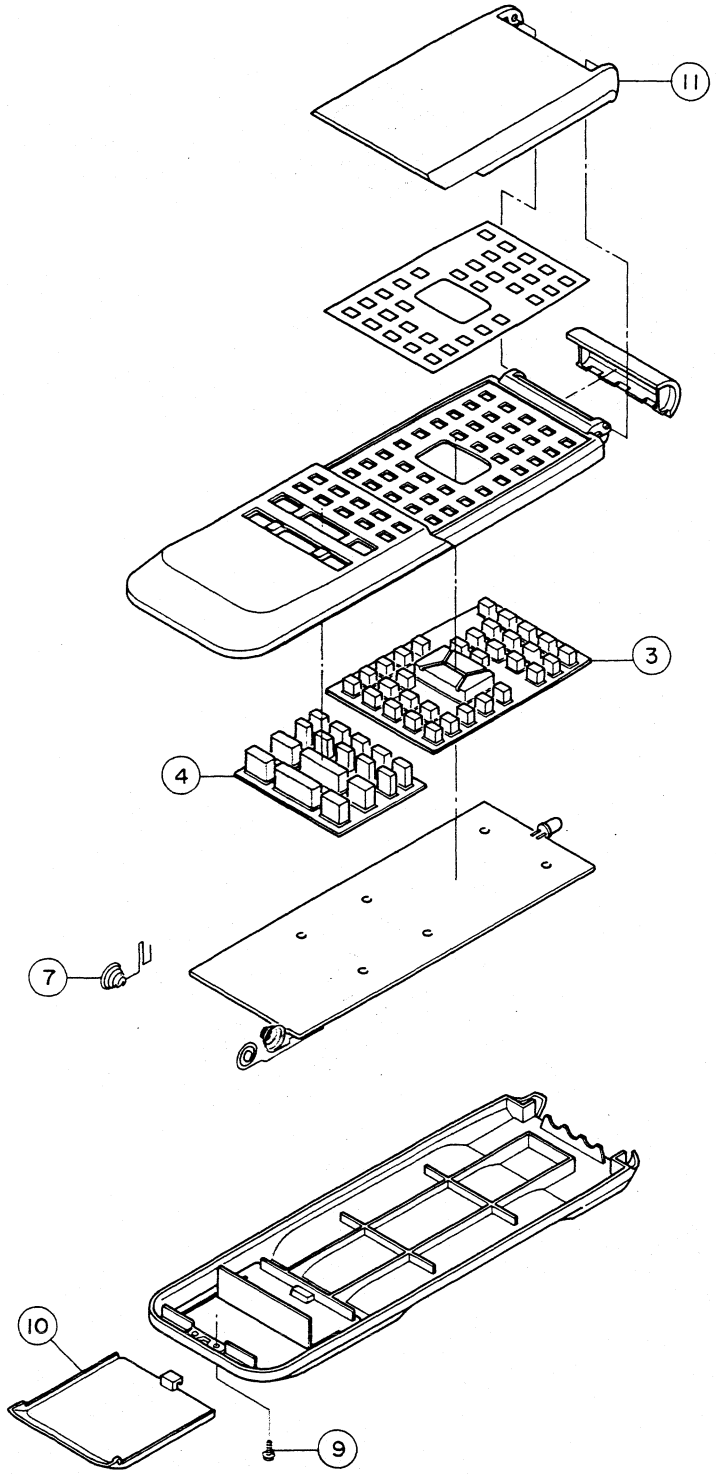
## 27. REMOCON RC-W202E/G

| Ref. No. | Part No. | Description |
|---|---|---|
| 3 | MB-414326J | KEY RUBBER |
| 6-A | EZ-414327J | IND NAME PLATE (1)-E [W202E] |
| 6-B | EZ-415490J | IND NAME PLATE (1)-G [W202G] |
| 7 | EM-408437J | IND LCD LD-B5444A ENGLISH |
| 8 | EJ-412291J | TERMINAL LCD (6) B1043 |
| 12 | ZS-414462J | PT BID20X05STL BNI |
| 13 | ZG-414335J | TERMINAL BATTERY (B3) |
| 15 | SK-414322J | SLIDE KNOB |
| 17 | SC-414324J | COVER BATTERY |
| 18 | ZS-415396J | PT CTS20X08STL CMT |

## 28. REMOCON P.C BOARD RC-W202

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-416503J | D LED SID1010CXM LF51 INFRARED |
| IC1 | EI-412300J | IC M50933-131FP QXDLCD1 |
| IC2 | EI-400672J | IC S-8052ALB-LE |
| SW1 | ES-414811J | SW SLIDE CHIP SSSS21 01-02N |
| SW2 | ES-394558J | SW TACT SKHRAA |
| TR1 | ET-413009J | TR CHIP 2SC2884-Y TE12R T12E |
| X1 | EI-368825M | OSC X'TAL C-002RX 32.768KHZ |
| X2 | EI-403451J | OSC CE CSB1200J 1.200MHZ |
| 1 | ZG-415292J | TERMINAL BATTERY (B1) |
| 2 | ZG-415294J | TERMINAL BATTERY (B2) |

## REMOCON RC-W201G



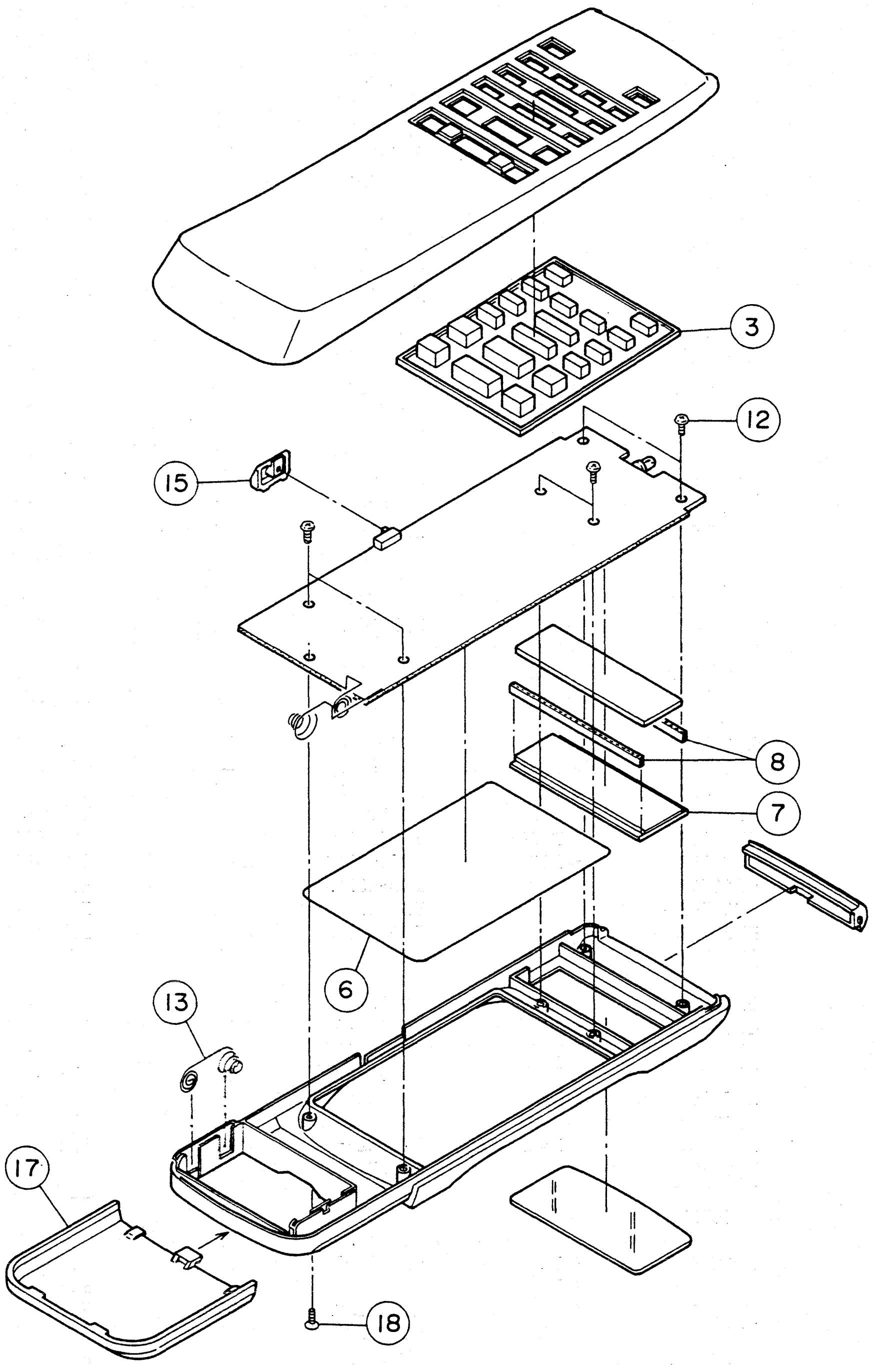
### 29. REMOCON RC-W201G

| Ref. No. | Part No. | Description |
|---|---|---|
| 3 | MB-415211J | KEY RUBBER (A7) |
| 4 | MB-415216J | KEY RUBBER (B) |
| 7 | ZG-413475J | TERMINAL BATTERY (B3) |
| 9 | ZS-374389 | PT BID20X06STL BNI |
| 10 | SC-415208J | COVER BATTERY |
| 11 | SP-415210J | DOOR PANEL |

### 30. REMOCON P.C BOARD RC-W201

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-403450J | D LED SE303ARF-C INFRARED |
| D2 | ED-386031J | D SILICON CHIP MA110-TW |
| D3 | ED-386031J | D SILICON CHIP MA110-TW |
| D4 | ED-386031J | D SILICON CHIP MA110-TW |
| IC1 | EI-376112 | IC UPD6122G |
| TR1 | ET-413009J | TR CHIP 2SC2884-Y TE12R T12E |
| X1 | EI-390687J | OSC CE CSU455PL 455KHZ |
| 1 | ZG-413476J1 | TERMINAL BATTERY (B1) |
| 2 | ZG-413477J | TERMINAL BATTERY (B2) |

## REMOCON RC-W212E



## 31. REMOCON RC-W212E

| Ref. No. | Part No. | Description |
|---|---|---|
| 3 | MB-414326J | KEY RUBBER |
| 6 | EZ-417484J | IND NAME PLATE (11)-E |
| 7 | EM-408437J | IND LCD LD-B5444A ENGLISH |
| 8 | EJ-412291J | TERMINAL LCD (6) B1043 |
| 12 | ZS-414462J | PT BID20X05STL BNI |
| 13 | ZG-414335J | TERMINAL BATTERY (B3) |
| 15 | SK-414322J | SLIDE KNOB |
| 17 | SC-414324J | COVER BATTERY |
| 18 | ZS-415396J | PT CTS20X08STL CMT |

## 32. REMOCON P.C BOARD RC-W212

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-416503J | D LED SID1010CXM LF51 INFRARED |
| IC1 | EI-416842J | IC M50934-069FP QXUKGW1 |
| IC2 | EI-400672J | IC S-8052ALB-LE |
| SW1 | ES-414811J | SW SLIDE CHIP SSSS21 01-02N |
| SW2 | ES-394558J | SW TACT SKHRAA |
| TR1 | ET-413009J | TR CHIP 2SC2884-Y TE12R T12E |
| X1 | EI-368825M | OSC X'TAL C-002RX 32.768KHZ |
| X2 | EI-403451J | OSC CE CSB1200J 1.200MHZ |
| 1 | ZG-415292J | TERMINAL BATTERY (B1) |
| 2 | ZG-415294J | TERMINAL BATTERY (B2) |

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| AVB1050A010A | 24-2-C | EC404196J | 18-C1 | ED307572 | 9-D16 | ED403725J | 6-D101 |
| AVB1050A010D | 24-2-B | EC404197J | 15-C23 | ED307572 | 9-D18 | ED403726J | 6-D210 |
| AVB1051A010B | 24-2-D | EC404197J | 15-C24 | ED307572 | 9-D19 | ED403730J | 6-D211 |
| AVB1065A010A | 24-2-E | EC405269J | 18-C4 | ED307572 | 9-D20 | ED403731J | 6-D6 |
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| BAV1130A610A | 5-2-C | EC405269J | 18-C15 | ED307572 | 9-D22 | ED403743J | 13-D23 |
| BAV1130A610B | 5-2-B | | | ED307572 | 10-D23 | ED403947J | 15-D102 |
| BAV1130A610C | 5-2-A | EC406635J | 18-C2 | ED307572 | 10-D24 | ED403948J | 15-D107 |
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| BAV1164A500C | 5-4-A | EC408426J | 15-C3 | ED307572 | 13-D20 | ED404032J | 15-D19 |
| BAV1164A600A | 5-1-A | EC408426J | 15-C14 | ED307572 | 13-D21 | ED404032J | 18-D19 |
| BAV1164A600C | 5-1-B | EC408426J | 19-C25 | ED307572 | 15-D16 | ED404033J | 18-D20 |
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| BAV1164A630G | 5-3-D | EC414869J | 13-C1 | ED307572 | 16-D10 | ED405265J | 15-D108 |
| BAV1164Q500B | 5-4-G | EC414870J | 13-C3 | ED307572 | 18-D32 | ED405265J | 15-D109 |
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| EE405638J | 6-2-B | EI403451J | 28-X2 | EO345880 | 21-L153 | EO410099J | 21-L154 |
| EE412395J | 6-2-C | EI403451J | 32-X2 | EO345881 | 6-L101 | EO410104J | 21-L151 |
| EE416524J | 6-2-E | EI403467J | 7-X602 | EO345881 | 6-L302 | EO410104J | 21-L152 |
| EF413079J | 15-F101 | EI403469J | 7-IC602 | EO345881 | 7-L601 | EO410254J | 15-L9 |
| EH366894 | 7-FL701 | EI405224J | 21-IC103 | EO345881 | 7-L605 | EO410254J | 18-L9 |
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| EH368948 | 11-CF3-A | EI408393J | 9-IC2 | EO345881 | 7-L702 | EO725965J | 11-L52 |
| EH368948 | 12-CF3 | EI408430J1 | 20-IC401 | EO345881 | 7-L901 | EO732831J | 11-L3-B |
| EH373918 | 12-CF4 | EI410125J | 21-IC105 | EO351866 | 7-L603 | EO732831J | 12-L2 |
| EH373919 | 11-CF3-C | EI410265J | 21-IC102 | EO351866 | 7-L604 | EO732832J | 11-L4 |
| EH373920 | 11-CF2-A | EI412300J | 28-IC1 | EO353587 | 9-L1 | EO732832J | 12-L3 |
| EH373921 | 11-CF2-B | EI414817J | 9-IC1-A | EO353587 | 9-L2 | EO732833J | 11-L5 |
| EH373921 | 12-CF53 | EI414822J1 | 6-IC301 | EO353900 | 6-L501 | EO732833J | 12-L4 |
| EH376338 | 12-CF2 | EI414884J | 21-IC104 | EO353900 | 6-L503 | EQ400153J | 15-RL101 |
| EH383056J | 9-IB3 | EI414885J | 21-IC109 | EO353900 | 6-L504 | ER307565 | 18-FR4 |
| EH383056J | 21-IB101 | EI414889J | 21-X101 | EO354600 | 6-L405 | ER328278 | 18-FR3 |
| EH383083J | 9-IB2 | EI416736J | 9-IC1-B | EO356722 | 6-L103 | ER328519 | 13-FR4 |
| EH386637J | 20-IB401 | EI416782J | 21-IC101 | EO356722 | 6-L470 | ER331188 | 20-FR601 |
| EH394684J | 6-FL1 | EI416842J | 32-IC1 | EO357508 | 6-L402 | ER331188 | 21-FR601 |
| EH394684J | 21-FL101 | EJ381075J | 8-PS1 | EO368129 | 7-L703 | ER368461 | 18-R78 |
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| EH416491J | 6-DL500 | EJ387622J | 10-PJ1 | EO376858 | 8-L1 | ER400689J | 15-FR4 |
| EH714628 | 11-CF1-B | EJ387623J | 10-PJ2 | EO376859 | 8-L4 | ER400728J | 13-FR2 |
| EH729986J | 11-CF3-B | EJ388345J | 6-P303 | EO376860 | 8-L14 | ER400728J | 15-FR1 |
| EH730625J | 11-CF1-A | EJ388345J | 6-P400 | EO380091J1 | 16-L10 | ER400728J | 18-FR1 |
| EH733514J | 11-L3-A | EJ388346J | 6-P304 | EO380091J1 | 19-L10 | ER400729J | 6-FR350 |
| EI200573 | 7-IC702 | EJ394841J | 6-P401 | EO381191J | 8-L5-A | ER400959J | 6-FR201 |
| EI310036 | 6-IC101 | EJ397357J | 9-P2 | EO381192J | 6-L403 | ER401039J | 15-FR102 |
| EI310036 | 7-IC902 | EJ412291J | 27-8 | EO381193J | 8-L8-A | ER403405J | 6-R214 |
| EI353421 | 6-IC302 | EJ412291J | 31-8 | EO381195J | 6-L511 | ER404093J | 6-FR202 |
| EI356457 | 6-IC403 | EJ414768J | 9-P3 | EO381195J | 8-L3 | ER404093J | 6-FR501 |
| EI366892 | 7-IC701 | EM401077J | 9-FL1 | EO381196J | 6-L301 | ER405441J | 15-FR5 |
| EI367882J1 | 9-X1 | EM408437J | 27-7 | EO381197J | 6-L512 | ER405441J | 18-FR5 |
| EI367882J1 | 20-X401 | EM408437J | 31-7 | EO386541J | 15-L6 | ER408375J | 13-FR1 |
| EI368809 | 11-IC1 | EO339907 | 13-FL1 | EO386541J | 18-L6 | ER408375J | 13-FR3 |
| EI368809 | 12-IC1 | EO339907 | 18-FL1 | EO387782J | 12-L1 | ER408375J | 15-FR2 |
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| EI368825M | 28-X1 | EO345865 | 20-L301 | EO387798J | 11-L7-B | ES349474 | 9-SW3 |
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# ABBREVIATIONS (VIDEO)

| ABBREVIATION | EXPLANATION | ABBREVIATION | EXPLANATION |
|---|---|---|---|
| A | Audio or Analogue | MOD | MODulator |
| AC | Alternating Current | MRS | Motor ReverSe |
| ACC | Automatic Color Control | NG | Noise Gate |
| A/C | Audio and Control | NICAM | Near Instantaneous Compand Audio Multiplex |
| ADJ | ADJust (ment) | | |
| AFC | Automatic Frequency Control | NON-LIN | NON-LINear |
| AFT | Automatic Fine Tuning | N.T.S.C. | National Television System Committee |
| AGC | Automatic Gain Control | OSC | OSCillator |
| AH | Audio Head | PAL | Phase Alternation by Line |
| AL | ALways (voltage) | PB | Play Back |
| ALC | Automatic Level Control | PCB (P.C.B) | Printed Circuit Board |
| A-SW.P | Audio SWitching Pulse | P-COM | Phase-COMparator |
| A-MUTE | Audio MUTE | P DOWN | Power DOWN |
| ANT | ANTenna | PG | Pulse Generator |
| APC | Automatic Phase Control | P.I.P | Picture In Picture |
| ASSY | ASSemblY | PL, PLG | PLunger (PLunGer) |
| BAL | BALance | PRG (PGM) | PRoGram (ProGraM) |
| B DOWN | Break DOWN | PU | Pick UP (head, pulse) |
| BGP | Burst Gate Pulse | PWR | PoWeR |
| BLK | BLocK or BLacK | Q | Quality factor |
| BPF | Band Pass Filter | R | Right |
| BU | Back Up (voltage) | RAM | Random Access Memory |
| B/W | Black and White | REC | RECord |
| C | Chroma or Color | REF | REFerence |
| CCD | Charge Coupled Device | REF-V | REFerence Vertical signal |
| CCIR | Comité Consultatif International des Radio communications | REG | REGulator |
| | | REV (REVW) | REView (REVieW) |
| CH (ch) | CHannel (channel) | REW | REWind |
| CLK | CLocK | RF | Radio Frequency |
| CM | Capstan Motor | ROM | Read Only Memory |
| CN | CoNnector | R.S SW | Record-Safety SWitch |
| COMP | COMParator | RST (RES) | ReSet (RESet) |
| CSW | Cassette SWitch | RVS | ReVerSe |
| CSYNC | Composite SYNC | S | Sensor, Shield |
| CTL | ConTrol | SAW | Surface Acoustic Wave |
| CUE | CUE | SC | SimulCast |
| DAC | Digital to Analog Converter | S CLK | Serial CLocK |
| DC | Direct Current | SECAM | SÉquentiel Couleur À Mémoire |
| DEMOD | DEMODulator | S & H | Sample and Hold |
| DET | DETetct (DETector) | SLP | Super Long Play |
| DL | Delay Line | SP | Standard Play |
| DM | Drum Motor | SPD | SPeeD |
| DOC | Drop Out Compensator | SRP | Supply Reel Pulse |
| D.P.E | Drum Phase Error | SRV | SeRVo |
| D.PG | Drum Pulse Generator | SOW | Sync On Word |
| EE | Electronic to Electronic | STBY | STandBY |
| EF | Emitter Follower | S.VHS | Super VHS |
| EMPHA | EMPHAsis | SW | SWitch |
| ENV | ENVelope | SW'NG | SWitchiNG |
| EP | Extended Play | SWP | SWitching Pulse |
| EP ROM | Erasable Programmable ROM | SYNC | SYNChronize |
| EQ | EQualizer | T-AUDIO | Tuner AUDIO |
| FE | Full track Erase | TPZ (TRAPE) | TraPeZoid (TRAPEzoid) |
| FF | Flip-Flop or Fast Foward | TRK | TRacKing |
| FG | Frequency Generator | TRP | Take up Reel Pulse |
| Fig | Figure | T/U | Take Up |
| FLD | FLuorescent Display | TV | TeleVision |
| FM | Frequency Modulation | UHF | Ultra High Frequency |
| Fo | resonance Frequency | UNR | UNRegulated (voltage) |
| FREQ | FREQuency | V | Vertical or Video |
| GND | GrouND | VASS | Video Address Search System |
| H | Horizontal | VCO | Voltage Controlled Oscillator |
| HP | Horizontal (sync) pulse | VH | Video Head |
| HPF | High Pass Filter | VHF | Very High Frequency |
| HQ | High Quality System | VHS | Video Home System |
| IC | Integrated Circuit | VIF | Video Intermediate Frequency |
| ID | IDentification | VISS | Video Index Search System |
| IDL | IDLe (Voltage) | VJ | Video Judge |
| IMS | Interactive Monitor System | VM | Voltage for Memory |
| INS | INSert | VOB | Video On Blank |
| INV | INVerter | VOW | Video On Word |
| L | Left | VP | Vertical (sync) Pulse |
| LED | Light Emitting Diode | VPS | Video Program System |
| LIM | LIMitter | VPT | Video Programming by video Text |
| LM | Loading Motor | VT | Voltage for Tuning |
| LM STP | Loading Motor STop | WHT | WHiTe |
| LP | Long Play | Y | Luminance |
| LPF | Low Pass Filter | 2H | 2 Hour (SP) |
| ME-SECAM | Middle East SECAM | 4H | 4 Hour (LP) |
| MI-COM | MIcro COMputer | 6H | 6 Hour (SLP/EP) |
| MM | Mono-stayble Multi | | |

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# AKAI

## MODEL VS-G20EDG/EK/EM/EO/EOH
## MODEL VS-G21EOH, G23EOH
## MODEL VS-G24EK/EOG, G25EOG-V

# SCHEMATIC DIAGRAMS AND PC BOARDS

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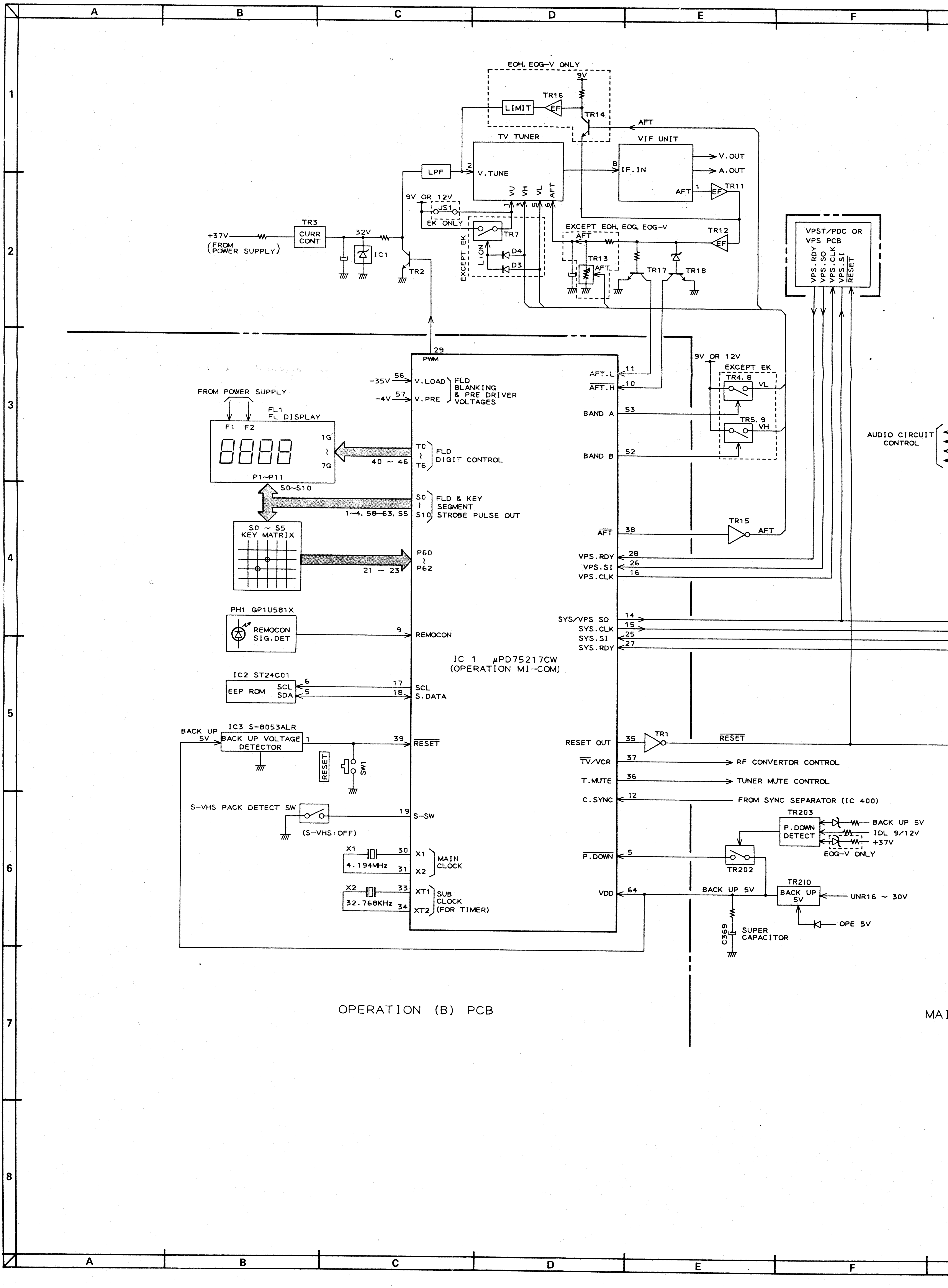
A
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AFT
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EF
9V OR 12V
JS1
EK ONLY
TR3
CURR CONT
+37V
(FROM POWER SUPPLY)
32V
IC1
TR2
EXCEPT EK
L:ON
TR7
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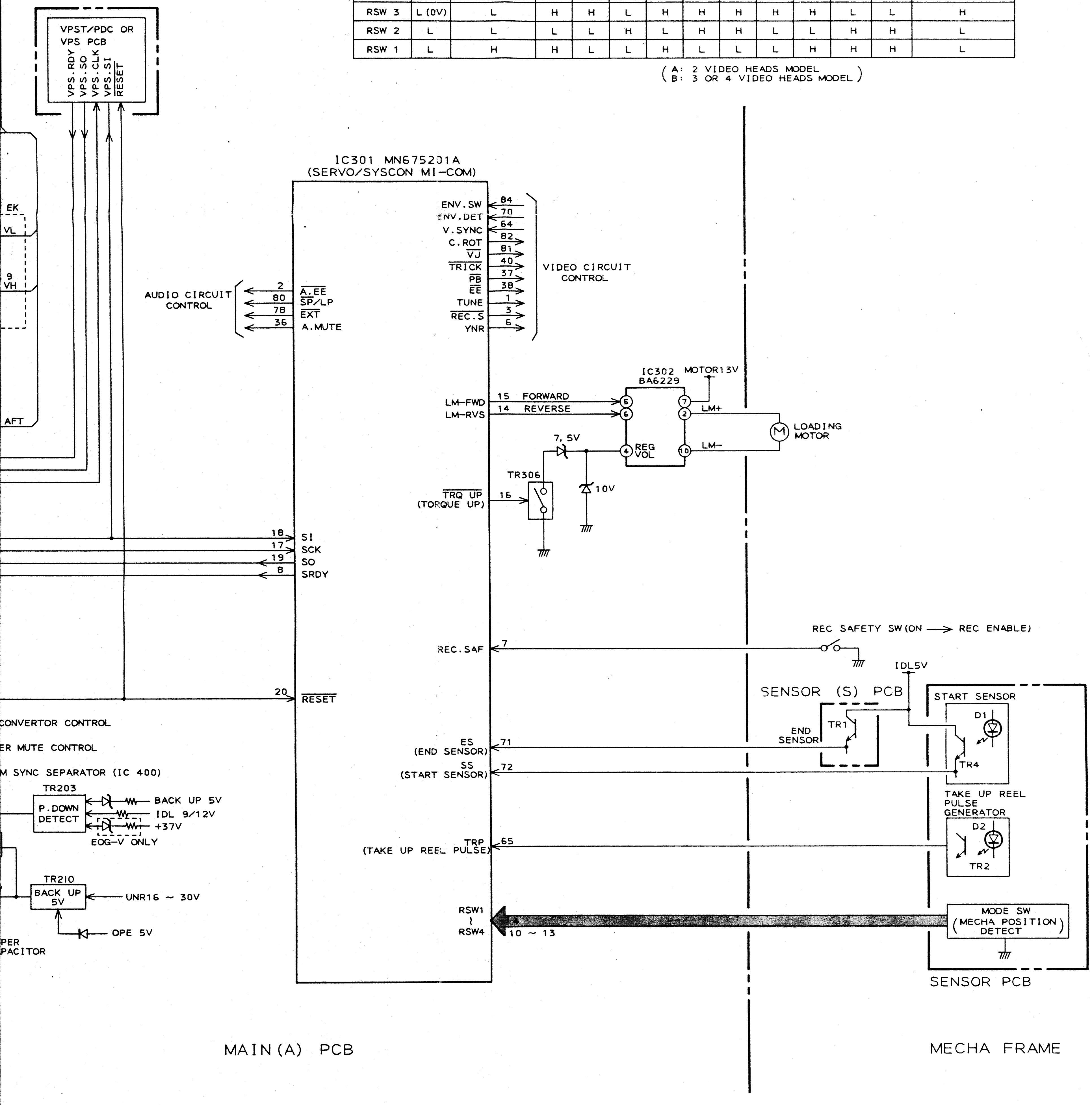
TR17
TR18
VPST/PDC OR VPS PCB
VPS.RDY
VPS.SO
VPS.CLK
VPS.SI
RESET
29
PWM
-35V
56
V.LOAD
-4V
57
V.PRE
FLD BLANKING & PRE DRIVER VOLTAGES
FROM POWER SUPPLY
FL1
FL DISPLAY
F1
F2
1G
7G
P1~P11
8888
T0 ~ T6
40 ~ 46
FLD DIGIT CONTROL
S0~S10
S0 ~ S10
1~4, 58~63, 55
FLD & KEY SEGMENT STROBE PULSE OUT
S0 ~ S5
KEY MATRIX
P60 ~ P62
21 ~ 23
PH1 GP1U581X
REMOCON SIG.DET
9
REMOCON
IC 1 µPD75217CW
(OPERATION MI-COM)
IC2 ST24C01
EEP ROM
SCL
SDA
6
5
17
18
SCL
S.DATA
BACK UP 5V
IC3 S-8053ALR
BACK UP VOLTAGE DETECTOR
1
39
RESET
RESET
SW1
S-VHS PACK DETECT SW
(S-VHS:OFF)
19
S-SW
X1
4.194MHz
30
31
X1
X2
MAIN CLOCK
X2
32.768KHz
33
34
XT1
XT2
SUB CLOCK (FOR TIMER)
AFT.L
11
AFT.H
10
BAND A
53
BAND B
52
9V OR 12V
EXCEPT EK
TR4, 8
VL
TR5, 9
VH
AFT
38
TR15
AFT
VPS.RDY
28
VPS.SI
26
VPS.CLK
16
SYS/VPS SO
14
SYS.CLK
15
SYS.SI
25
SYS.RDY
27
AUDIO CIRCUIT CONTROL
RESET OUT
35
TR1
RESET
TV/VCR
37
RF CONVERTOR CONTROL
T.MUTE
36
TUNER MUTE CONTROL
C.SYNC
12
FROM SYNC SEPARATOR (IC 400)
TR203
P.DOWN DETECT
BACK UP 5V
IDL 9/12V
+37V
EOG-V ONLY
P.DOWN
5
TR202
VDD
64
BACK UP 5V
TR210
BACK UP 5V
UNR16 ~ 30V
OPE 5V
C369
SUPER CAPACITOR
OPERATION (B) PCB
MA

| MODE / OUTPUT | EJECT | STOP (TAPE LOADED) | PAUSE/PLAY | | PLAY | | REVIEW | | CUE | | FF | REW | POWER OFF (WITH CASSETTE) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | B | A | B | A | B | A | B | | | |
| RSW 4 | H (5V) | L | L | L | L | L | L | H | L | L | L | L | H |
| RSW 3 | L (0V) | L | H | H | L | H | H | H | H | H | L | L | H |
| RSW 2 | L | L | L | L | H | L | H | H | L | L | H | H | L |
| RSW 1 | L | H | H | L | L | H | L | L | L | H | H | H | L |

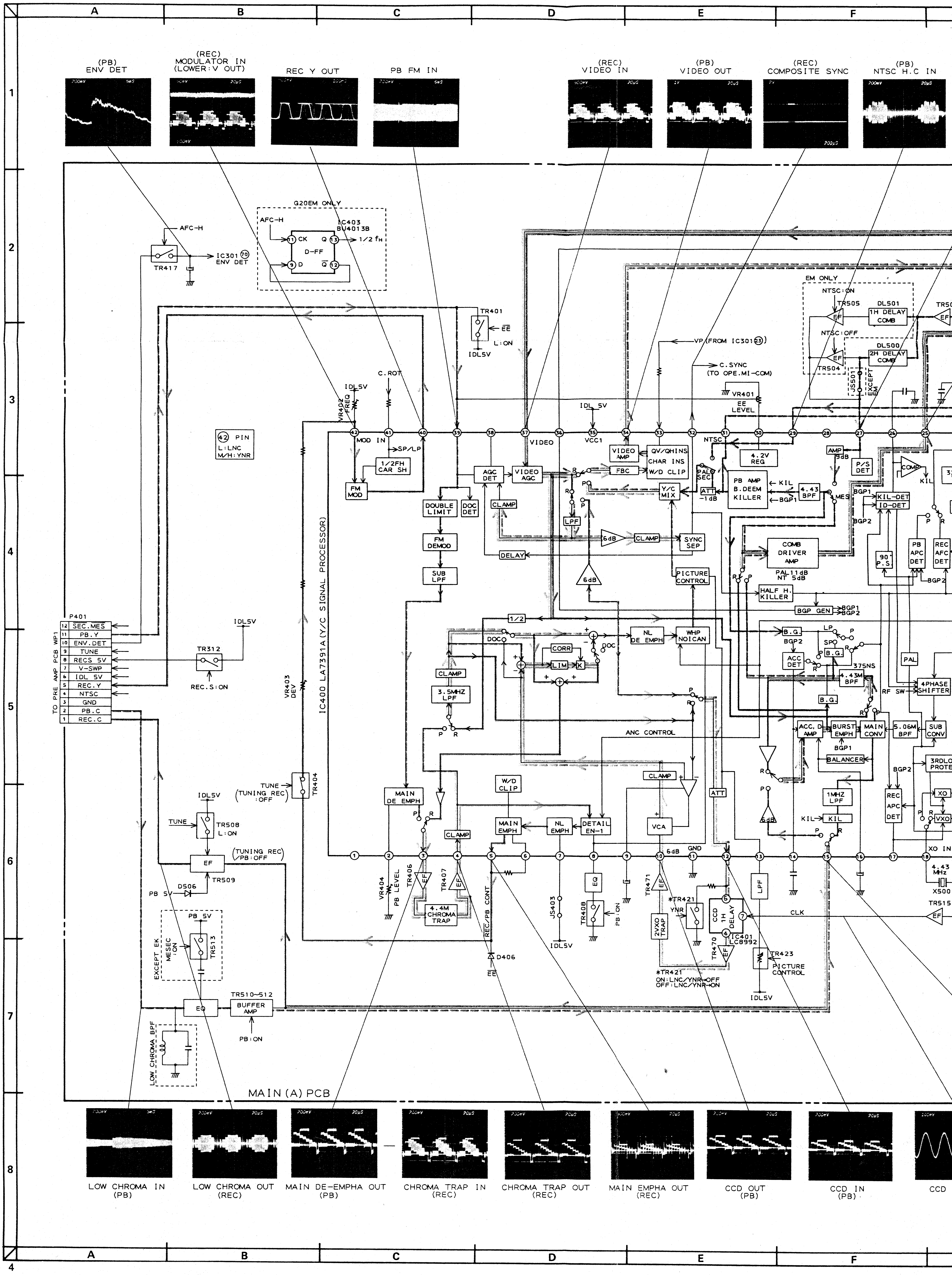
(A: 2 VIDEO HEADS MODEL
B: 3 OR 4 VIDEO HEADS MODEL)

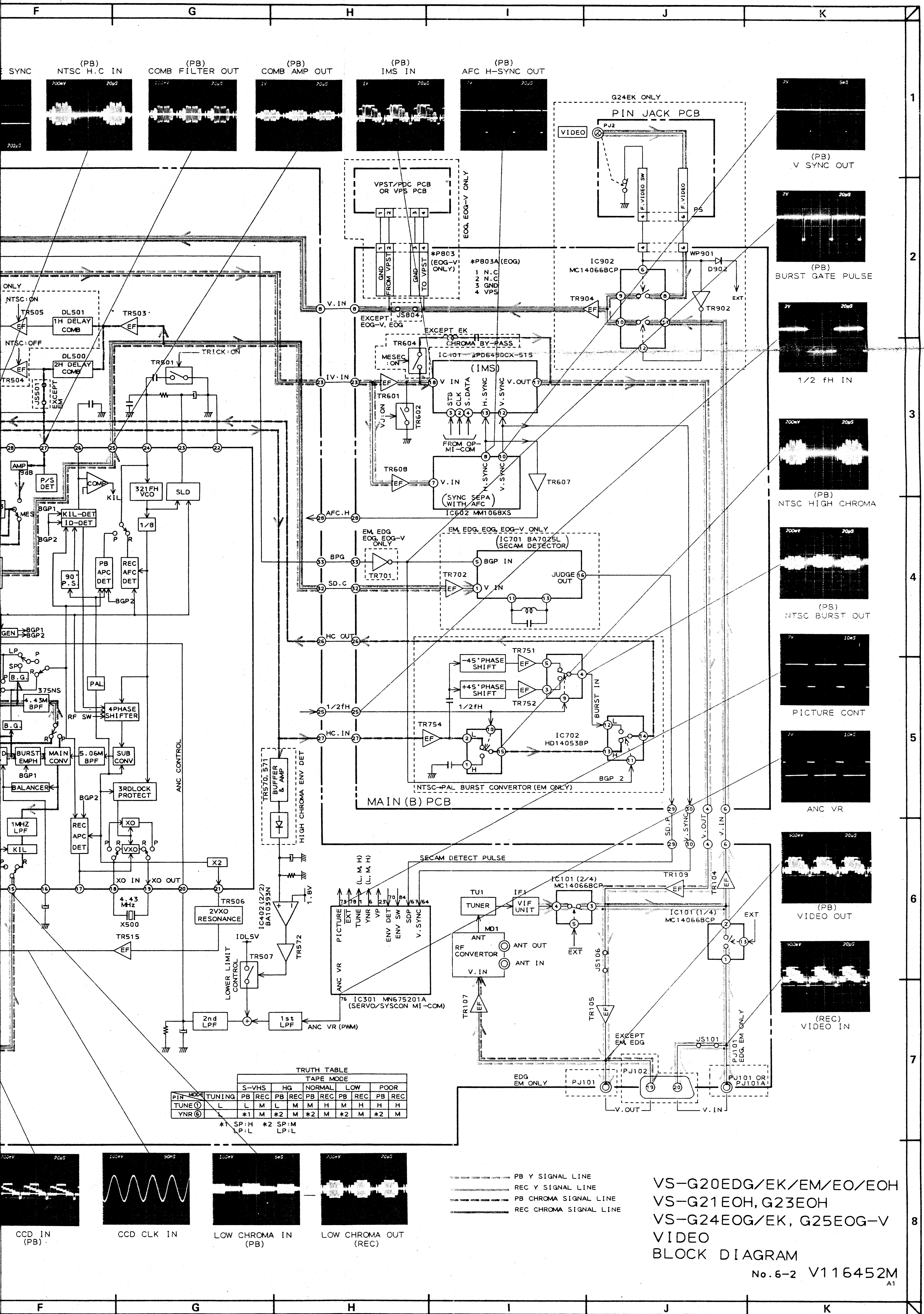

VPST/PDC OR
VPS PCB
VPS.RDY
VPS.SO
VPS.CLK
VPS.SI
RESET
EK
VL
9
VH
AFT
IC301 MN675201A
(SERVO/SYSCON MI-COM)
AUDIO CIRCUIT CONTROL
2 A.EE
80 SP/LP
78 EXT
36 A.MUTE
ENV.SW 84
ENV.DET 70
V.SYNC 64
C.ROT 82
VJ 81
TRICK 40
PB 37
EE 38
TUNE 1
REC.S 3
YNR 6
VIDEO CIRCUIT CONTROL
IC302 BA6229
MOTOR13V
LM-FWD 15 FORWARD
LM-RVS 14 REVERSE
5
6
7
2
4
10
REG VOL
LM+
LM-
LOADING MOTOR
M
7, 5V
10V
TR306
TRQ UP (TORQUE UP) 16
18 SI
17 SCK
19 SO
8 SRDY
20 RESET
CONVERTOR CONTROL
ER MUTE CONTROL
M SYNC SEPARATOR (IC 400)
TR203
P.DOWN DETECT
BACK UP 5V
IDL 9/12V
+37V
EOG-V ONLY
TR210
BACK UP 5V
UNR16 ~ 30V
OPE 5V
PER
PACITOR
REC SAFETY SW (ON → REC ENABLE)
REC.SAF 7
IDL5V
SENSOR (S) PCB
END SENSOR
TR1
ES (END SENSOR) 71
SS (START SENSOR) 72
START SENSOR
D1
TR4
TAKE UP REEL PULSE GENERATOR
D2
TR2
TRP (TAKE UP REEL PULSE) 65
RSW1 ~ RSW4
10 ~ 13
MODE SW (MECHA POSITION DETECT)
SENSOR PCB
MAIN (A) PCB
MECHA FRAME

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V

## OPERATION & SYSCON BLOCK DIAGRAM

No.6-1 V116451M
A2


A
B
C
D
E
F
1
2
3
4
5
6
7
8
(PB) ENV DET
(REC) MODULATOR IN (LOWER:V OUT)
REC Y OUT
PB FM IN
(REC) VIDEO IN
(PB) VIDEO OUT
(REC) COMPOSITE SYNC
(PB) NTSC H.C IN
AFC-H
TR417
IC301 (70) ENV DET
G20EM ONLY
IC403 BU4013B
CK
D-FF
1/2 fH
TR401
EE
L:ON
IDL5V
C.ROT
VR402 FREQ
MOD IN
SP/LP
1/2FH CAR SH
FM MOD
(42) PIN
L:LNC
M/H:YNR
AGC DET
VIDEO AGC
VIDEO
VCC1
VIDEO AMP
QV/QHINS
CHAR INS
W/D CLIP
FBC
Y/C MIX
VP (FROM IC301 (23))
C.SYNC (TO OPE.MI-COM)
VR401 EE LEVEL
NTSC
4.2V REG
PAL SEC
ATT -1dB
PB AMP
B.DEEM
KILLER
KIL
BGP1
4.43 BPF
MES
AMP 9dB
P/S DET
COMP
KIL-DET
ID-DET
BGP2
EM ONLY
NTSC:ON
TR505
DL501 1H DELAY COMB
NTSC:OFF
DL500 2H DELAY COMB
TR504
JS501 EXCEPT EM
DOUBLE LIMIT
DOC DET
CLAMP
LPF
FM DEMOD
6dB
SYNC SEP
DELAY
SUB LPF
PICTURE CONTROL
COMB DRIVER AMP
PAL 11dB NT 5dB
HALF H. KILLER
BGP GEN
90° P.S
PB APC DET
REC AFC DET
IC400 LA7391A (Y/C SIGNAL PROCESSOR)
P401
12 SEC.MES
11 PB.Y
10 ENV.DET
9 TUNE
8 RECS 5V
7 V-SWP
6 IDL 5V
5 REC.Y
4 NTSC
3 GND
2 PB.C
1 REC.C
TO PRE AMP PCB WP1
TR312
REC.S:ON
VR403 DEV
1/2
DOC
CORR
LIM
K
NL DE EMPH
WHP NOICAN
B.G.
LP
SP
ACC DET
375NS
4.43M BPF
PAL
4PHASE SHIFTER
RF SW
3.5MHZ LPF
ANC CONTROL
ACC. AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RDLO PROTE
TUNE
TUNING REC :OFF
TR404
MAIN DE EMPH
W/D CLIP
MAIN EMPH
NL EMPH
DETAIL EN-1
VCA
ATT
1MHZ LPF
KIL
REC APC DET
XO
VXO
XO IN
4.43 MHz
X500
TR508
L:ON
EF
TUNING REC /PB:OFF
TR509
D506
PB 5V
VR404 PB LEVEL
TR406
TR407
4.4M CHROMA TRAP
REC/PB CONT
D406
EE
JS403
EQ
TR408
PB:ON
TR471
2VXO TRAP
*TR421
YNR
CCD 1H DELAY
IC401 LC8992
TR470
LPF
CLK
TR515
TR423
PICTURE CONTROL
*TR421
ON:LNC/YNR→OFF
OFF:LNC/YNR→ON
GND
6dB
EXCEPT EK
MESEC :ON
TR513
TR510~512
BUFFER AMP
LOW CHROMA BPF
MAIN (A) PCB
LOW CHROMA IN (PB)
LOW CHROMA OUT (REC)
MAIN DE-EMPHA OUT (PB)
CHROMA TRAP IN (REC)
CHROMA TRAP OUT (REC)
MAIN EMPHA OUT (REC)
CCD OUT (PB)
CCD IN (PB)
CCD


F
G
H
I
J
K
1
2
3
4
5
6
7
8
SYNC
(PB) NTSC H.C IN
(PB) COMB FILTER OUT
(PB) COMB AMP OUT
(PB) IMS IN
(PB) AFC H-SYNC OUT
(PB) V SYNC OUT
(PB) BURST GATE PULSE
1/2 fH IN
(PB) NTSC HIGH CHROMA
(PB) NTSC BURST OUT
PICTURE CONT
ANC VR
(PB) VIDEO OUT
(REC) VIDEO IN
CCD IN (PB)
CCD CLK IN
LOW CHROMA IN (PB)
LOW CHROMA OUT (REC)
G24EK ONLY
PIN JACK PCB
VIDEO
PJ2
F.VIDEO SW
F.VIDEO
P5
VPST/PDC PCB OR VPS PCB
EOG, EOG-V ONLY
GND
FROM VPST
TO VPST
*P803 (EOG-V ONLY)
*P803A (EOG)
1 N.C
2 N.C
3 GND
4 VPS
JS804
EXCEPT EOG-V, EOG
IC902 MC14066BCP
WP901
D902
TR904
TR902
EXT
V.IN
IV.IN
NTSC:ON
TR505
DL501 1H DELAY COMB
TR503
NTSC:OFF
DL500 2H DELAY COMB
TR504
JS501 EXCEPT EM
TR501
TRICK:ON
EXCEPT EK
CHROMA BY-PASS
TR604
MESEC :ON
IC601 μPD6450CX-515 (IMS)
V.OUT
STB CLK S.DATA H.SYNC V.SYNC
TR601
TR602
FROM OP-MI-COM
TR608
TR607
(SYNC SEPA WITH AFC)
IC602 MM1068XS
AFC.H
AMP 9dB
P/S DET
COMP
KIL
321FH VCO
SLD
1/8
MES
BGP1
KIL-DET
ID-DET
BGP2
90° P.S
PB APC DET
REC AFC DET
GEN BGP1 BGP2
BPG
SD.C
EM, EDG EOG, EOG-V ONLY
TR701
EM, EDG, EOG, EOG-V ONLY
IC701 BA7025L SECAM DETECTOR
TR702
BGP IN
JUDGE OUT
HC OUT
TR751
-45° PHASE SHIFT
+45° PHASE SHIFT
TR752
1/2fH
BURST IN
TR754
IC702 HD14053BP
HC.IN
BGP 2
NTSC→PAL BURST CONVERTOR (EM ONLY)
MAIN (B) PCB
LP SP
B.G.
375NS
4.43M BPF
PAL
4PHASE SHIFTER
RF SW
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BGP1
BALANCER
3RDLOCK PROTECT
BGP2
1MHZ LPF
KIL
REC APC DET
XO
VXO
X2
XO IN
XO OUT
4.43 MHz
X500
TR506
2VXO RESONANCE
TR515
ANC CONTROL
TR570, 571 BUFFER & AMP
HIGH CHROMA ENV DET
IC402 (2/2) BA10393N
1.8V
TR572
IDL5V
TR507
LOWER LIMIT CONTROL
2nd LPF
1st LPF
ANC VR (PWM)
SECAM DETECT PULSE
PICTURE EXT TUNE YNR VP ENV DET ENV SW SDP V.SYNC
(L, M, H)
ANC VR
IC301 MN675201A (SERVO/SYSCON MI-COM)
TU1 TUNER
IF1 VIF UNIT
IC101 (2/4) MC14066BCP
MD1 ANT RF CONVERTOR V.IN
ANT OUT
ANT IN
EXT
TR109
TR104
IC101 (1/4) MC14066BCP
JS106
TR107
TR105
SD.P
V.SYNC
V.OUT
V.IN
EXCEPT EM, EDG
JS101
PJ101 EDG, EM ONLY
EDG EM ONLY
PJ101
PJ102
PJ101 OR PJ101A
V.OUT
V.IN

TRUTH TABLE

| PIN \ MODE | TUNING | TAPE MODE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | S-VHS | | HG | | NORMAL | | LOW | | POOR | |
| | | PB | REC | PB | REC | PB | REC | PB | REC | PB | REC |
| TUNE ① | L | L | M | L | M | M | H | M | H | H | H |
| YNR ⑥ | L | *1 | M | *2 | M | *2 | M | *2 | M | *2 | M |

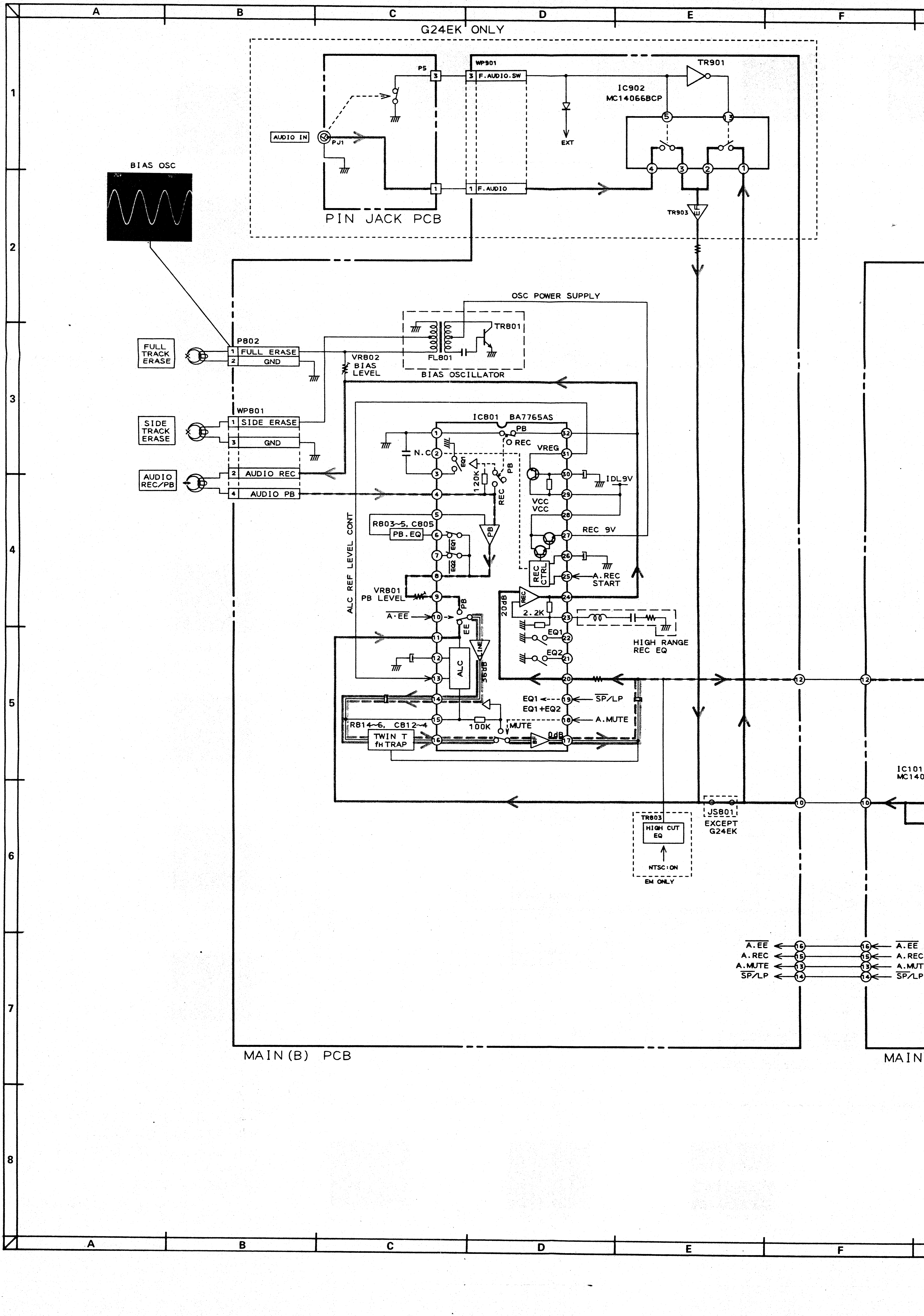
*1 SP:H
LP:L

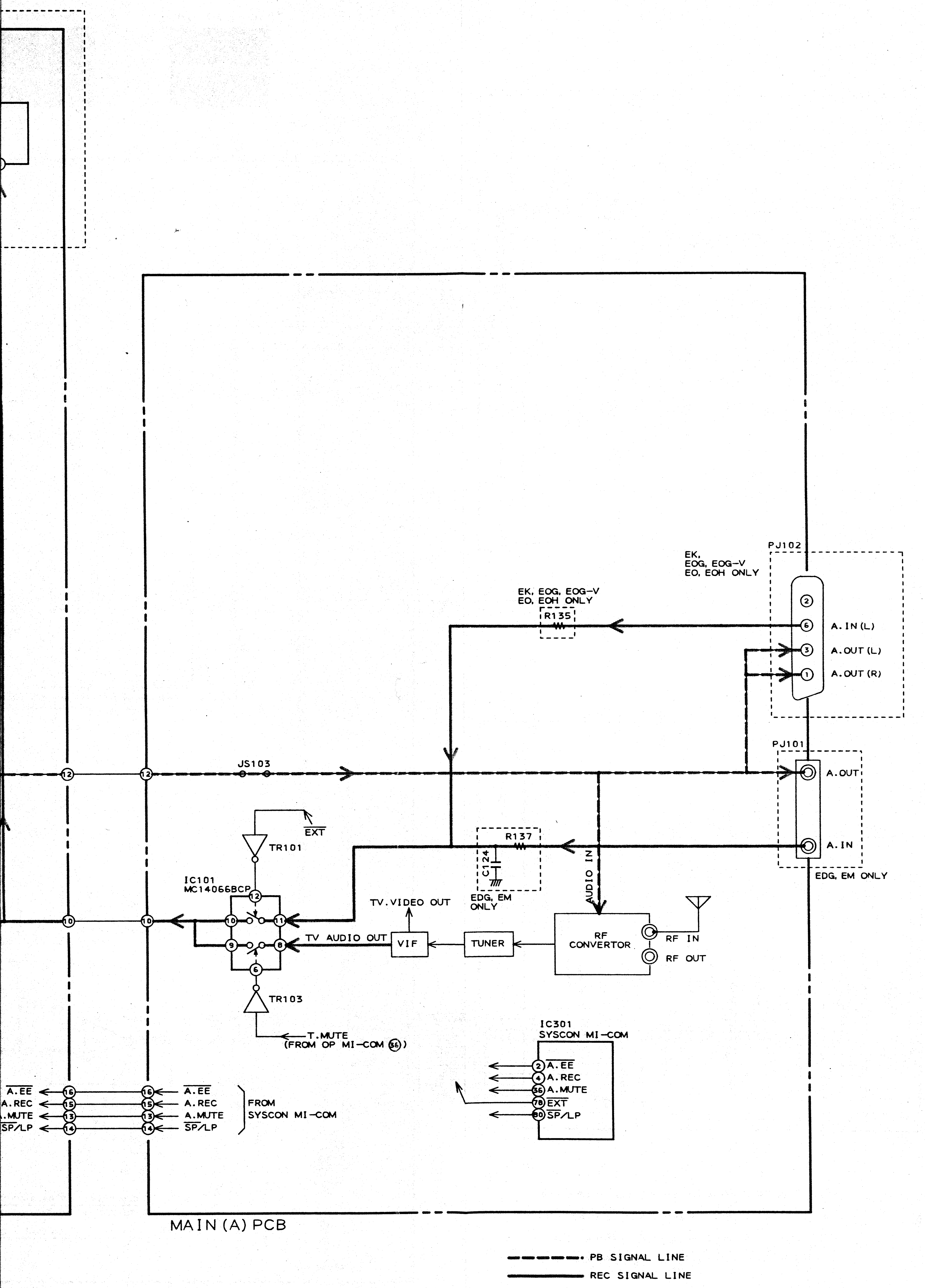
*2 SP:M
LP:L

PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
VIDEO
BLOCK DIAGRAM

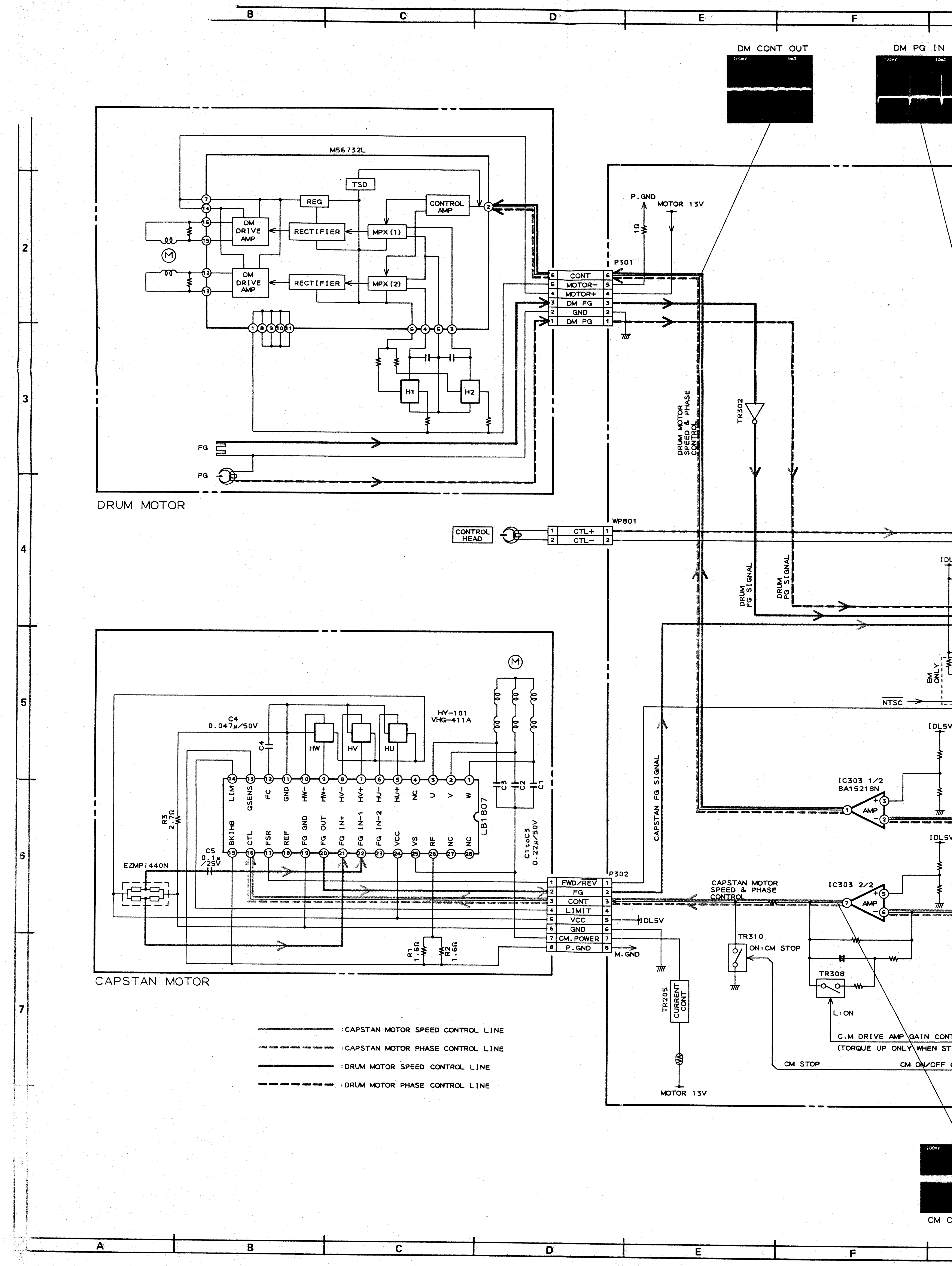
No.6-2 V116452M
A1

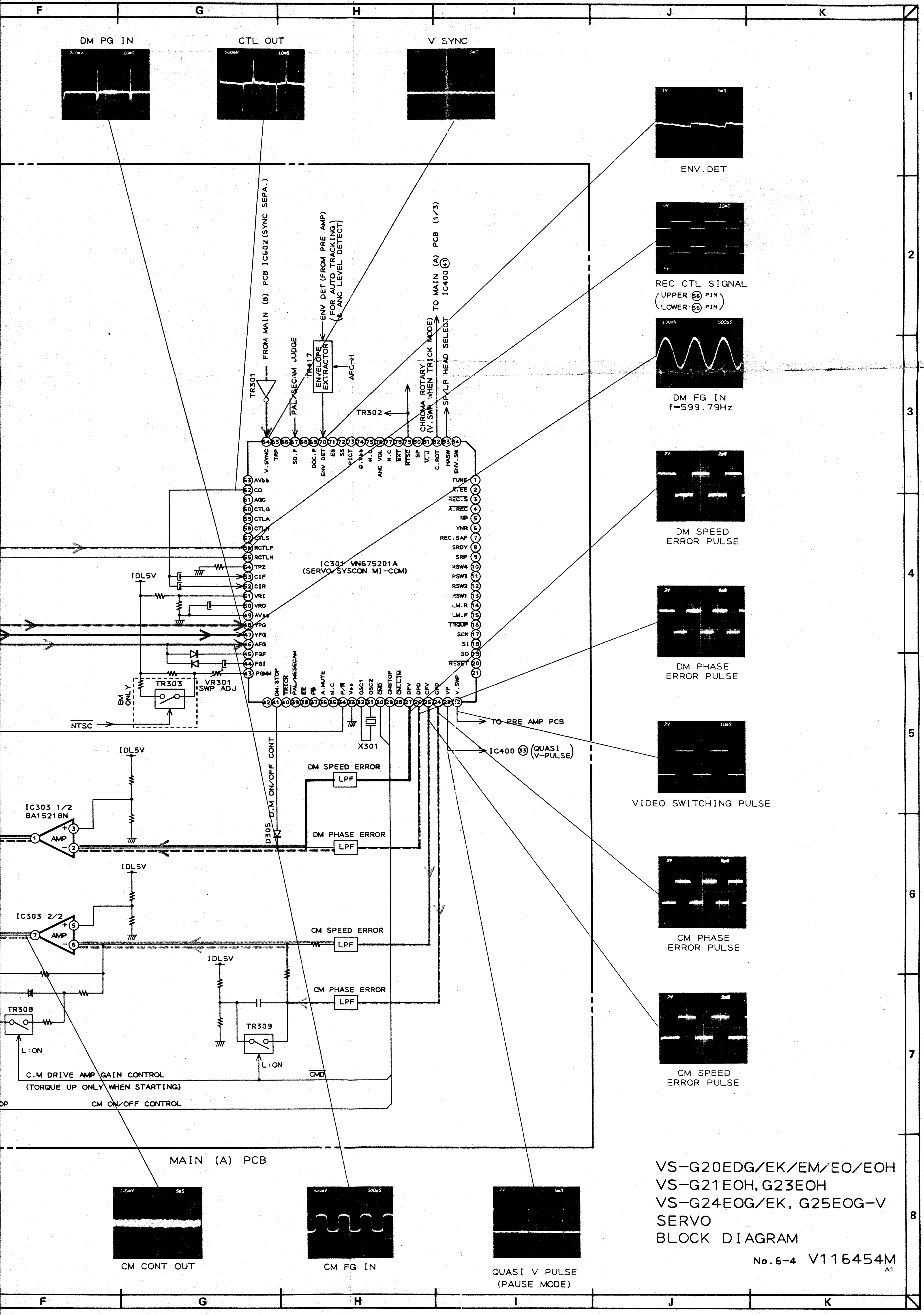

A
B
C
D
E
F
1
2
3
4
5
6
7
8
G24EK ONLY
P5
WP901
3 F.AUDIO.SW
1 F.AUDIO
TR901
IC902
MC14066BCP
AUDIO IN
PJ1
EXT
TR903
PIN JACK PCB
BIAS OSC
OSC POWER SUPPLY
TR801
FL801
BIAS OSCILLATOR
P802
1 FULL ERASE
2 GND
FULL TRACK ERASE
VR802
BIAS LEVEL
WP801
1 SIDE ERASE
3 GND
2 AUDIO REC
4 AUDIO PB
SIDE TRACK ERASE
AUDIO REC/PB
IC801 BA7765AS
PB
REC
N.C
EQ1
EQ2
120K
VREG
IDL 9V
VCC
VCC
REC 9V
REC CTRL
A.REC START
ALC REF LEVEL CONT
R803~5, C805
PB.EQ
VR801
PB LEVEL
A·EE
EE
LINE
ALC
36dB
20dB
2.2K
HIGH RANGE REC EQ
EQ1 ← EQ1+EQ2
SP/LP
A.MUTE
MUTE
100K
0dB
BF
R814~6, C812~4
TWIN T fH TRAP
TR803
HIGH CUT EQ
NTSC:ON
EM ONLY
JS801
EXCEPT G24EK
IC101
MC140
A.EE
A.REC
A.MUTE
SP/LP
MAIN(B) PCB
MAIN


F
G
H
I
J
PJ102
EK, EOG, EOG−V EO, EOH ONLY
EK, EOG, EOG−V EO, EOH ONLY
R135
②
⑥ A.IN(L)
③ A.OUT(L)
① A.OUT(R)
PJ101
A.OUT
A.IN
EDG, EM ONLY
JS103
⑫
⑩
EXT
TR101
IC101
MC14066BCP
R137
C124
EDG, EM ONLY
AUDIO IN
TV.VIDEO OUT
TV AUDIO OUT
VIF
TUNER
RF CONVERTOR
RF IN
RF OUT
TR103
T.MUTE
(FROM OP MI−COM ㊱)
IC301
SYSCON MI−COM
② A.EE
④ A.REC
㊱ A.MUTE
(78) EXT
(80) SP/LP
A.EE ⑯
A.REC ⑮
A.MUTE ⑬
SP/LP ⑭
FROM SYSCON MI−COM
MAIN (A) PCB
PB SIGNAL LINE
REC SIGNAL LINE
2
3
4
5
6
7
8
F
G
H
I
J
K

VS−G20EDG/EK/EM/EO/EOH
VS−G21EOH, 23EOH
VS−G24EOG/EK , G25EOG−V
AUDIO
BLOCK DIAGRAM

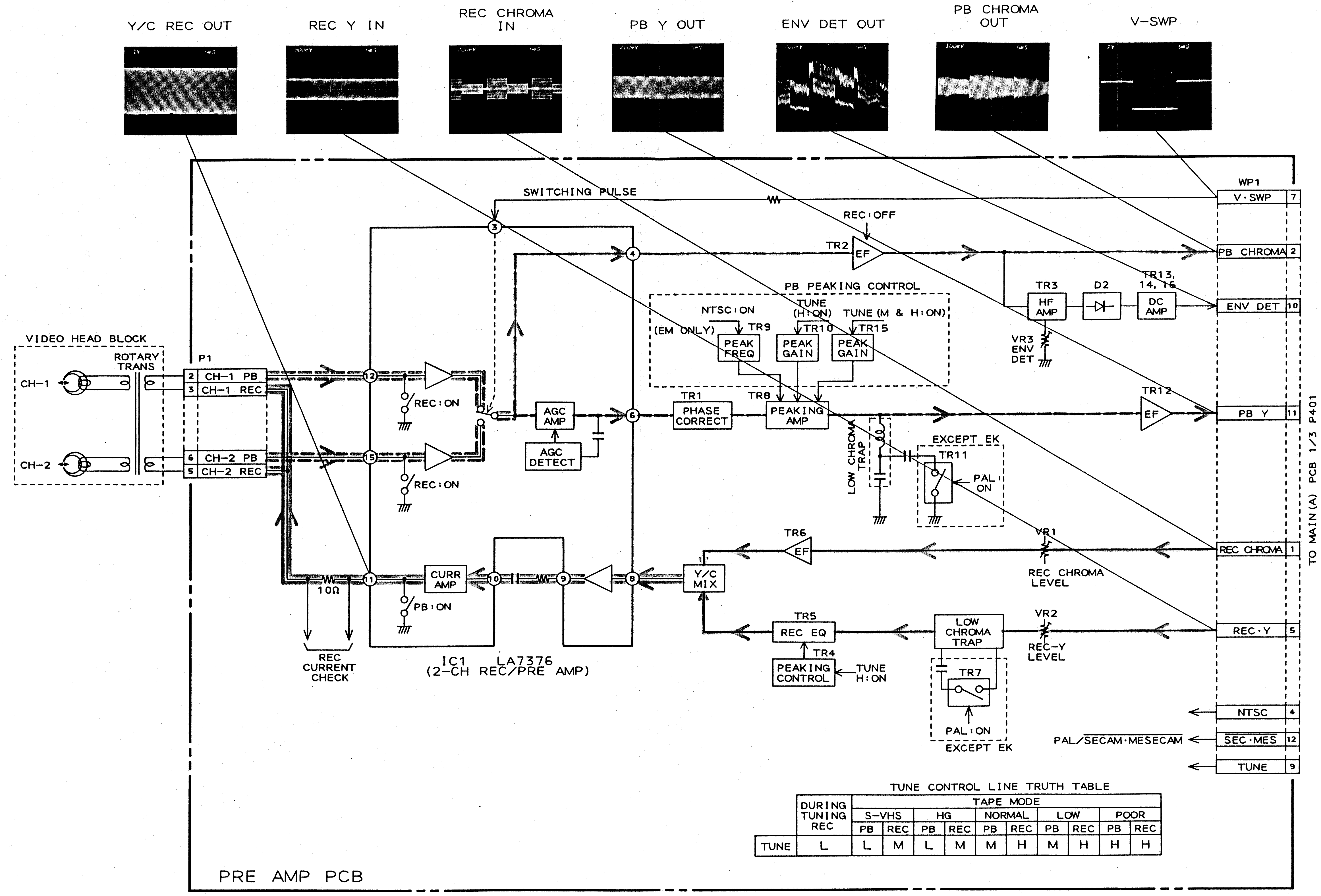
No.6−3 V116453M
A2


B
C
D
E
F
DM CONT OUT
DM PG IN
M56732L
TSD
REG
CONTROL AMP
DM DRIVE AMP
RECTIFIER
MPX (1)
MPX (2)
H1
H2
FG
PG
DRUM MOTOR
P.GND
MOTOR 13V
1Ω
P301
CONT
MOTOR−
MOTOR+
DM FG
GND
DM PG
DRUM MOTOR SPEED & PHASE CONTROL
TR302
DRUM FG SIGNAL
DRUM PG SIGNAL
CONTROL HEAD
WP801
CTL+
CTL−
IDL
EM ONLY
NTSC
IDL5V
IC303 1/2
BA15218N
AMP
HY-101
VHG-411A
C4 0.047μ/50V
HW
HV
HU
LIM
GSENS
FC
GND
HW−
HW+
HV−
HV+
HU−
HU+
NC
U
V
W
BKIHB
CTL
FSR
REF
FG GND
FG OUT
FG IN+
FG IN−1
FG IN−2
VCC
VS
RF
LB1807
C3
C2
C1
C1toC3 0.22μ/50V
R3 2.7Ω
C5 0.1μ /25V
EZMPI440N
R1 1.6Ω
R2 1.6Ω
CAPSTAN FG SIGNAL
P302
FWD/REV
FG
CONT
LIMIT
VCC
GND
CM.POWER
P.GND
IDL5V
M.GND
CAPSTAN MOTOR
CAPSTAN MOTOR SPEED & PHASE CONTROL
IC303 2/2
TR310
ON:CM STOP
TR308
L:ON
TR205
CURRENT CONT
C.M DRIVE AMP GAIN CONT
(TORQUE UP ONLY WHEN ST
CM STOP
CM ON/OFF C
MOTOR 13V
CM C
:CAPSTAN MOTOR SPEED CONTROL LINE
:CAPSTAN MOTOR PHASE CONTROL LINE
:DRUM MOTOR SPEED CONTROL LINE
:DRUM MOTOR PHASE CONTROL LINE
A
2
3
4
5
6
7


F
G
H
I
J
K
1
2
3
4
5
6
7
8
DM PG IN
CTL OUT
V SYNC
ENV.DET
REC CTL SIGNAL
(UPPER:(66) PIN)
(LOWER:(65) PIN)
DM FG IN
f=599.79Hz
DM SPEED ERROR PULSE
DM PHASE ERROR PULSE
VIDEO SWITCHING PULSE
CM PHASE ERROR PULSE
CM SPEED ERROR PULSE
CM CONT OUT
CM FG IN
QUASI V PULSE
(PAUSE MODE)
FROM MAIN (B) PCB IC602 (SYNC SEPA.)
TR301
ENV DET (FROM PRE AMP)
(FOR AUTO TRACKING & ANC LEVEL DETECT)
TR417
ENVELOPE EXTRACTOR
AFC-H
PAL/SECAM JUDGE
TR302
CHROMA ROTARY (V.SWP WHEN TRICK MODE)
TO MAIN (A) PCB (1/3) IC400 (41)
SP/LP HEAD SELECT
V.SYNC
TRP
SD.P
DOC.P
ENV DET
ES
SS
PICT
D.Wb
N.C
ANC VOL
N.C
EXT
NTSC
SP
V.Tj
C.ROT
HASW
ENV.SW
AVbb
CO
AGC
CTLG
CTLA
CTLH
CTLS
RCTLP
RCTLN
TPZ
CIF
CIR
VRI
VRO
AVss
YPG
YFG
AFG
FGF
FGI
PGM4
TUNE
R.EE
REC.S
A.REC
NP
YNR
REC.SAF
SRDY
SRP
RSW4
RSW3
RSW2
RSW1
LM.R
LM.F
TRQUP
SCK
SI
SO
RESET
IC301 MN675201A
(SERVO/SYSCON MI-COM)
DM.STOP
TRICK
PAL/MESECAM
EE
PB
A.MUTE
N.C
F/R
Vss
OSC1
OSC2
CMD
CMSTOP
CM.CTM
DFV
DPD
CFV
CPD
VP
V.SWP
TO PRE AMP PCB
IC400 (33) (QUASI V-PULSE)
X301
IDL5V
TR303
VR301
SWP ADJ
EM ONLY
NTSC
D.M ON/OFF CONT
D305
DM SPEED ERROR
DM PHASE ERROR
LPF
IC303 1/2
BA15218N
IC303 2/2
AMP
CM SPEED ERROR
CM PHASE ERROR
TR308
TR309
L:ON
C.M DRIVE AMP GAIN CONTROL
(TORQUE UP ONLY WHEN STARTING)
CMD
CM ON/OFF CONTROL
MAIN (A) PCB

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
SERVO
BLOCK DIAGRAM

No.6-4 V116454M A1


Y/C REC OUT
REC Y IN
REC CHROMA IN
PB Y OUT
ENV DET OUT
PB CHROMA OUT
V-SWP
VIDEO HEAD BLOCK
ROTARY TRANS
CH-1
CH-2
P1
2 CH-1 PB
3 CH-1 REC
6 CH-2 PB
5 CH-2 REC
SWITCHING PULSE
REC:ON
REC:ON
PB:ON
AGC AMP
AGC DETECT
CURR AMP
10Ω
REC CURRENT CHECK
IC1 LA7376
(2-CH REC/PRE AMP)
REC:OFF
TR2
EF
PB PEAKING CONTROL
NTSC:ON
(EM ONLY)
TR9
PEAK FREQ
TUNE (H:ON)
TR10
PEAK GAIN
TUNE (M & H:ON)
TR15
PEAK GAIN
TR1
PHASE CORRECT
TR8
PEAKING AMP
LOW CHROMA TRAP
EXCEPT EK
TR11
PAL:ON
TR3
HF AMP
D2
TR13, 14, 16
DC AMP
VR3 ENV DET
TR12
EF
TR6
EF
Y/C MIX
VR1
REC CHROMA LEVEL
TR5
REC EQ
TR4
PEAKING CONTROL
TUNE H:ON
LOW CHROMA TRAP
VR2
REC-Y LEVEL
TR7
PAL:ON
EXCEPT EK
PAL/SECAM·MESECAM
WP1
V·SWP 7
PB CHROMA 2
ENV DET 10
PB Y 11
REC CHROMA 1
REC·Y 5
NTSC 4
SEC·MES 12
TUNE 9
TO MAIN (A) PCB 1/3 P401
PRE AMP PCB

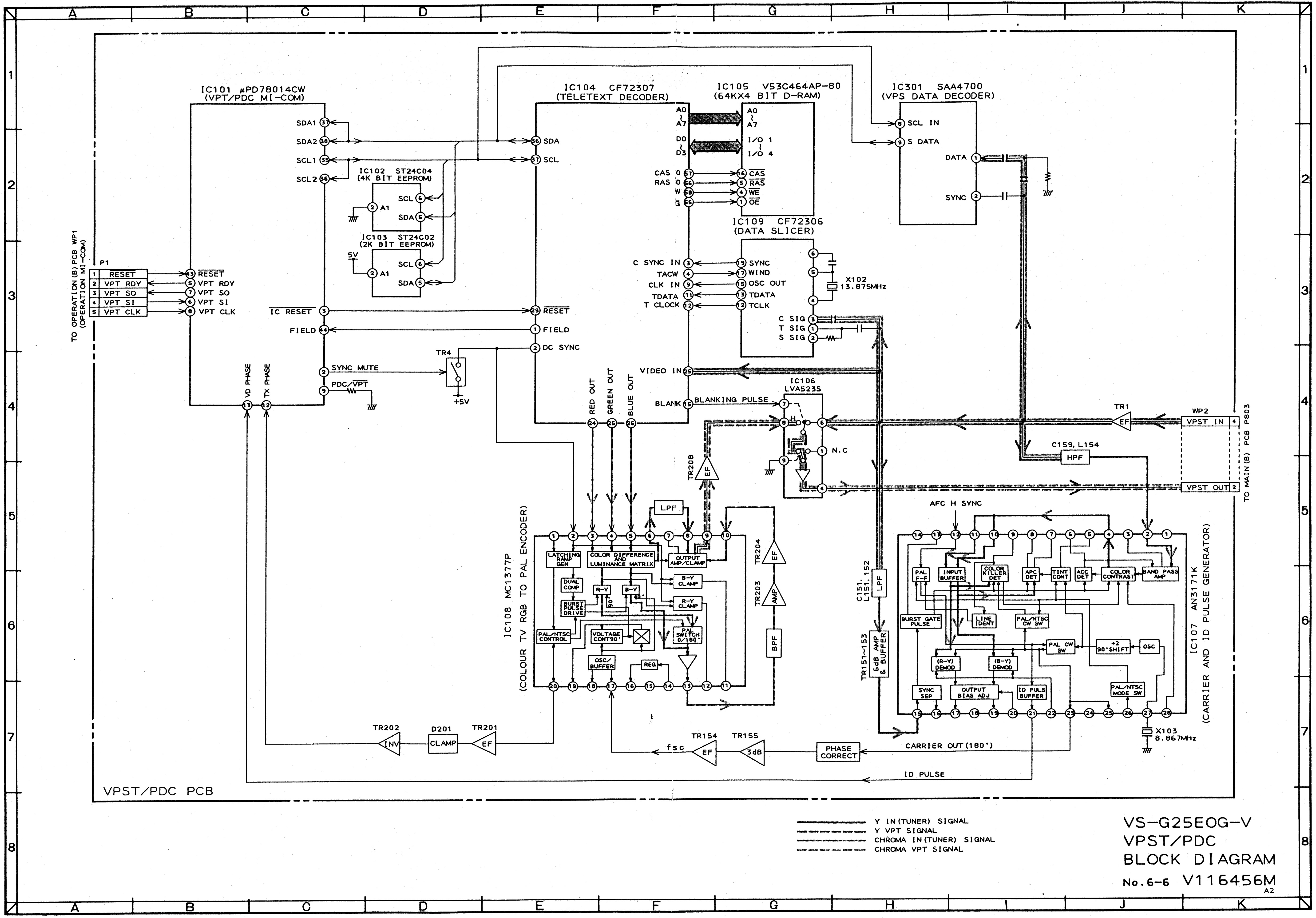
TUNE CONTROL LINE TRUTH TABLE

| | DURING TUNING REC | TAPE MODE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | S-VHS | | HG | | NORMAL | | LOW | | POOR | |
| | | PB | REC | PB | REC | PB | REC | PB | REC | PB | REC |
| TUNE | L | L | M | L | M | M | H | M | H | H | H |

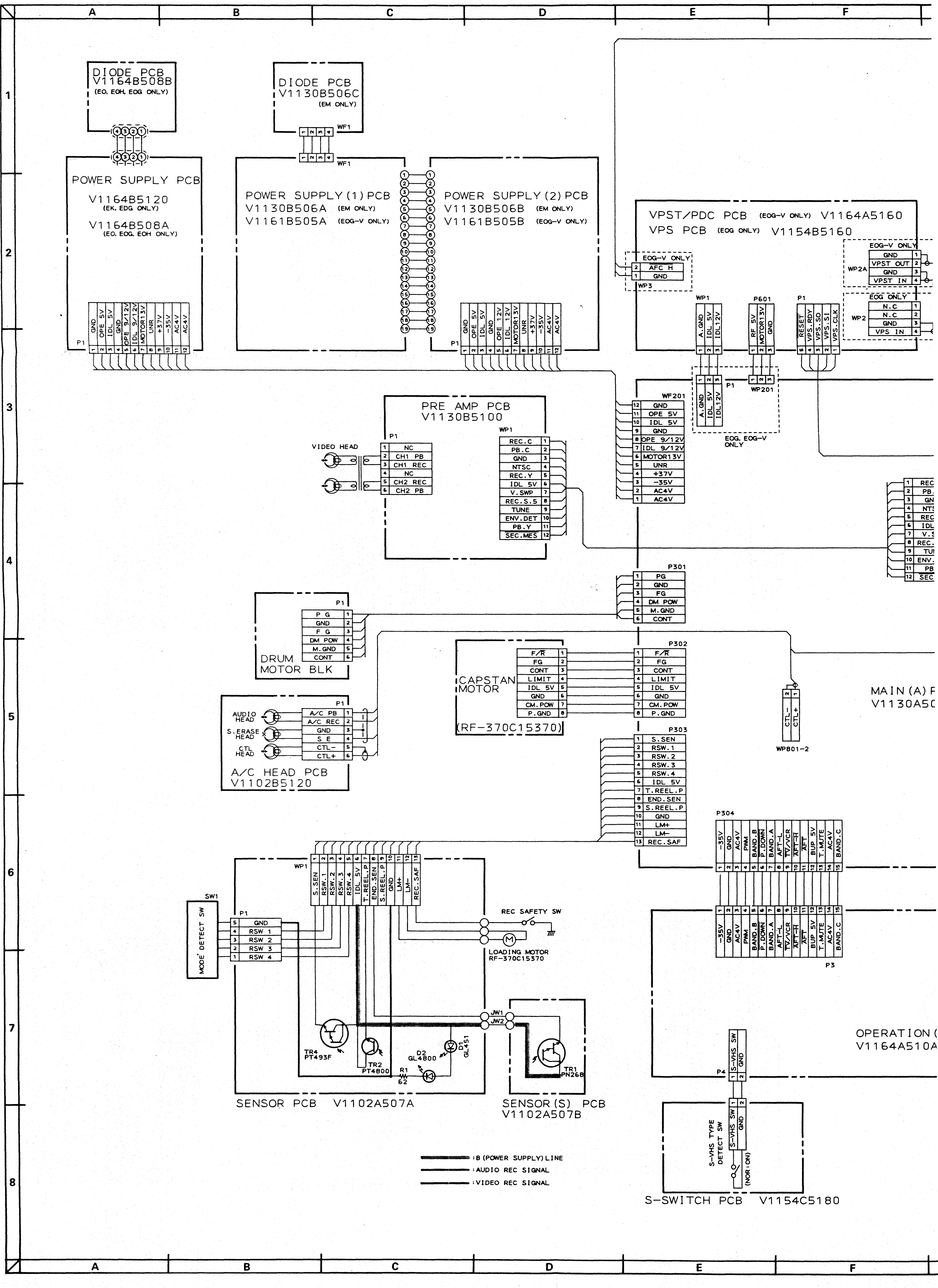
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE

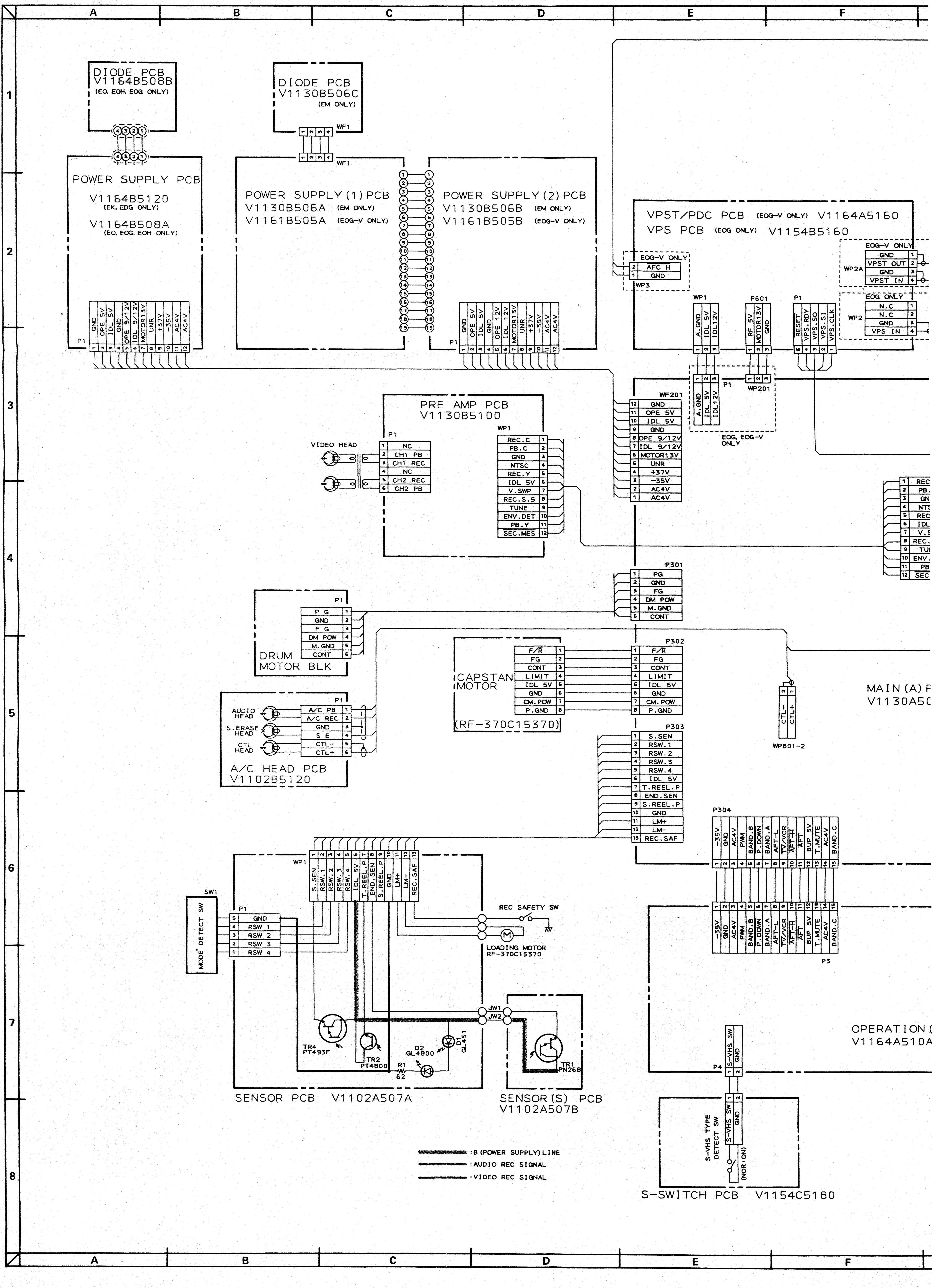
## VS-G20EDG/EK/EM/EO/EOH
## VS-G21EOH, G23EOH
## VS-G24EOG/EK, G25EOG-V
## PRE AMP
## BLOCK DIAGRAM

No.6-5 V116455M
A1


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC101 μPD78014CW
(VPT/PDC MI-COM)
SDA1 37
SDA2 38
SCL1 35
SCL2 36
RESET 43
VPT RDY 5
VPT SO 7
VPT SI 6
VPT CLK 8
IC RESET 3
FIELD 44
SYNC MUTE 2
PDC/VPT 9
VD PHASE 13
TX PHASE 12
IC102 ST24C04
(4K BIT EEPROM)
IC103 ST24C02
(2K BIT EEPROM)
SCL 6
SDA 5
A1 2
5V
TO OPERATION (B) PCB WP1
(OPERATION MI-COM)
P1
1 RESET
2 VPT RDY
3 VPT SO
4 VPT SI
5 VPT CLK
TR4
+5V
IC104 CF72307
(TELETEXT DECODER)
SDA 36
SCL 37
RESET 29
FIELD 1
DC SYNC 2
A0 ~ A7
D0 ~ D3
CAS 0 67
RAS 0 66
W 68
G 65
C SYNC IN 3
TACW 4
CLK IN 9
TDATA 11
T CLOCK 12
VIDEO IN 25
BLANK 15
RED OUT 24
GREEN OUT 25
BLUE OUT 26
IC105 V53C464AP-80
(64KX4 BIT D-RAM)
A0 ~ A7
I/O 1 ~ I/O 4
16 CAS
5 RAS
4 WE
1 OE
IC109 CF72306
(DATA SLICER)
19 SYNC
17 WIND
15 OSC OUT
13 TDATA
12 TCLK
C SIG 3
T SIG 1
S SIG 2
X102
13.875MHz
IC301 SAA4700
(VPS DATA DECODER)
8 SCL IN
9 S DATA
DATA 1
SYNC 2
IC106
LVA523S
BLANKING PULSE
H
N.C
TR208
EF
TR1
EF
WP2
VPST IN 4
VPST OUT 2
TO MAIN (B) PCB P803
C159, L154
HPF
IC108 MC1377P
(COLOUR TV RGB TO PAL ENCODER)
LATCHING RAMP GEN
COLOR DIFFERENCE AND LUMINANCE MATRIX
OUTPUT AMP/CLAMP
LPF
DUAL COMP
BURST PULSE DRIVE
R-Y
B-Y
90°
B-Y CLAMP
R-Y CLAMP
PAL/NTSC CONTROL
VOLTAGE CONT90°
PAL SWITCH 0/180°
OSC/BUFFER
REG
TR204
EF
TR203
AMP
BPF
C151, L151, 152
LPF
TR151~153
6dB AMP & BUFFER
AFC H SYNC
IC107 AN3171K
(CARRIER AND ID PULSE GENERATOR)
PAL F-F
INPUT BUFFER
COLOR KILLER DET
APC DET
TINT CONT
ACC DET
COLOR CONTRAST
BAND PASS AMP
BURST GATE PULSE
LINE IDENT
PAL/NTSC CW SW
PAL CW SW
÷2 90°SHIFT
OSC
(R-Y) DEMOD
(B-Y) DEMOD
SYNC SEP
OUTPUT BIAS ADJ
ID PULS BUFFER
PAL/NTSC MODE SW
X103
8.867MHz
TR202
INV
D201
CLAMP
TR201
EF
TR154
EF
TR155
3dB
fsc
PHASE CORRECT
CARRIER OUT (180°)
ID PULSE
VPST/PDC PCB
Y IN (TUNER) SIGNAL
Y VPT SIGNAL
CHROMA IN (TUNER) SIGNAL
CHROMA VPT SIGNAL

VS-G25EOG-V
VPST/PDC
BLOCK DIAGRAM
No.6-6 V116456M
A2


A
B
C
D
E
F
1
2
3
4
5
6
7
8
DIODE PCB
V1164B508B
(EO, EOH, EOG ONLY)
DIODE PCB
V1130B506C
(EM ONLY)
WF1
POWER SUPPLY PCB
V1164B5120
(EK, EDG ONLY)
V1164B508A
(EO, EOG, EOH ONLY)
POWER SUPPLY (1) PCB
V1130B506A (EM ONLY)
V1161B505A (EOG-V ONLY)
POWER SUPPLY (2) PCB
V1130B506B (EM ONLY)
V1161B505B (EOG-V ONLY)
P1
GND
OPE 5V
IDL 5V
GND
OPE 9/12V
IDL 9/12V
MOTOR13V
UNR
+37V
−35V
AC4V
AC4V
OPE 12V
IDL 12V
VPST/PDC PCB (EOG-V ONLY) V1164A5160
VPS PCB (EOG ONLY) V1154B5160
EOG-V ONLY
AFC H
GND
WP3
EOG-V ONLY
VPST OUT
VPST IN
WP2A
EOG ONLY
N.C
VPS IN
WP2
WP1
A.GND
IDL 5V
IDL12V
P601
RF 5V
MOTOR13V
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP201
EOG, EOG-V ONLY
WF201
PRE AMP PCB
V1130B5100
VIDEO HEAD
NC
CH1 PB
CH1 REC
CH2 REC
CH2 PB
REC.C
PB.C
NTSC
REC.Y
V.SWP
REC.S.5
TUNE
ENV.DET
PB.Y
SEC.MES
P301
PG
FG
DM POW
M.GND
CONT
DRUM MOTOR BLK
P302
F/R̄
LIMIT
CM.POW
P.GND
CAPSTAN MOTOR
(RF-370C15370)
CTL−
CTL+
WP801-2
MAIN (A) P
V1130A50
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
A/C PB
A/C REC
S E
A/C HEAD PCB
V1102B5120
P303
S.SEN
RSW.1
RSW.2
RSW.3
RSW.4
T.REEL.P
END.SEN
S.REEL.P
LM+
LM−
REC.SAF
P304
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
BAND.C
P3
SW1
MODE DETECT SW
RSW 1
RSW 2
RSW 3
RSW 4
REC SAFETY SW
LOADING MOTOR
RF-370C15370
JW1
JW2
TR4
PT493F
TR2
PT4800
D2
GL4800
D1
GL451
R1
62
TR1
PN268
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B
OPERATION (
V1164A510A
P4
S-VHS SW
S-VHS TYPE DETECT SW
(NOR: ON)
S-SWITCH PCB V1154C5180
: B (POWER SUPPLY) LINE
: AUDIO REC SIGNAL
: VIDEO REC SIGNAL


A
B
C
D
E
F
1
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3
4
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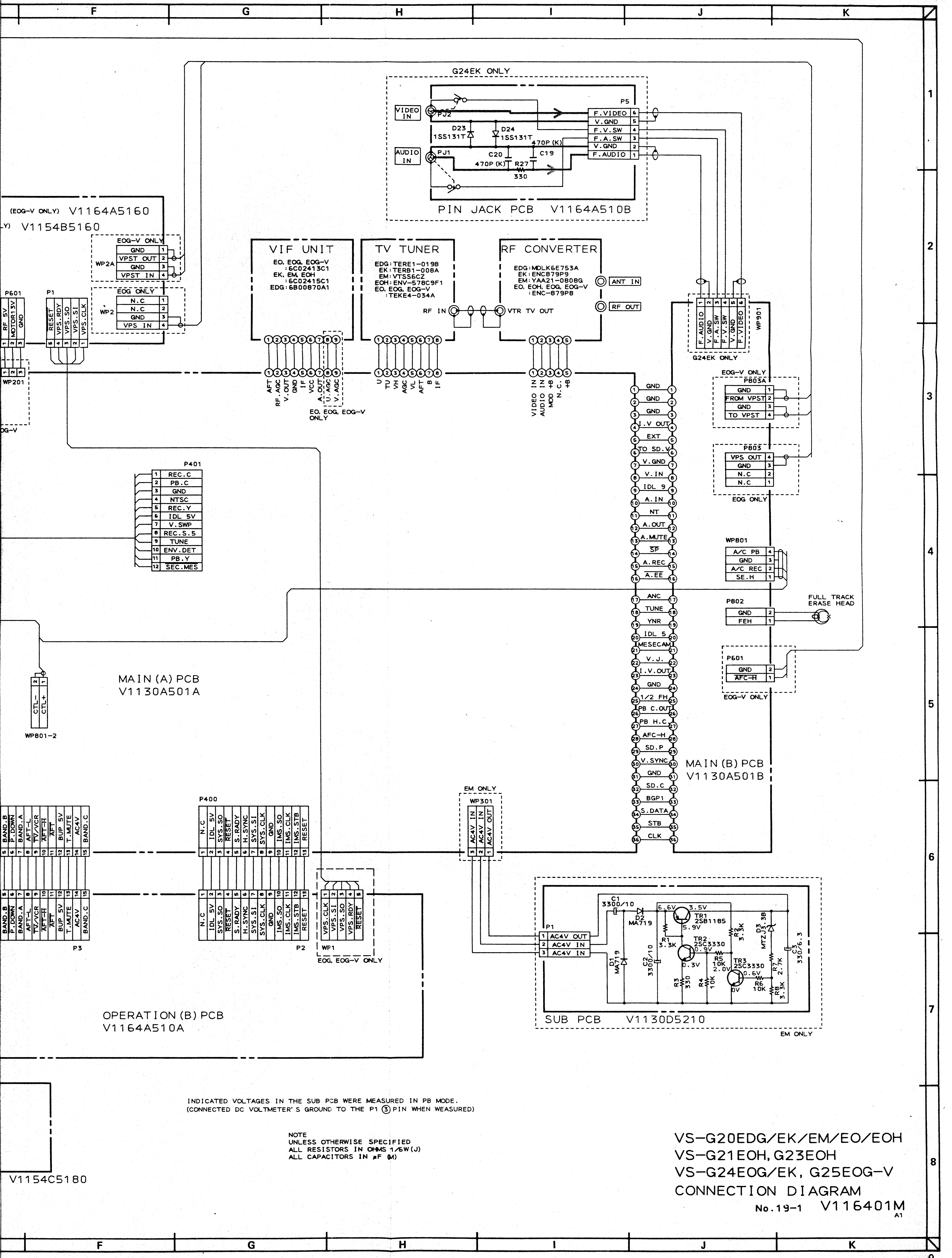
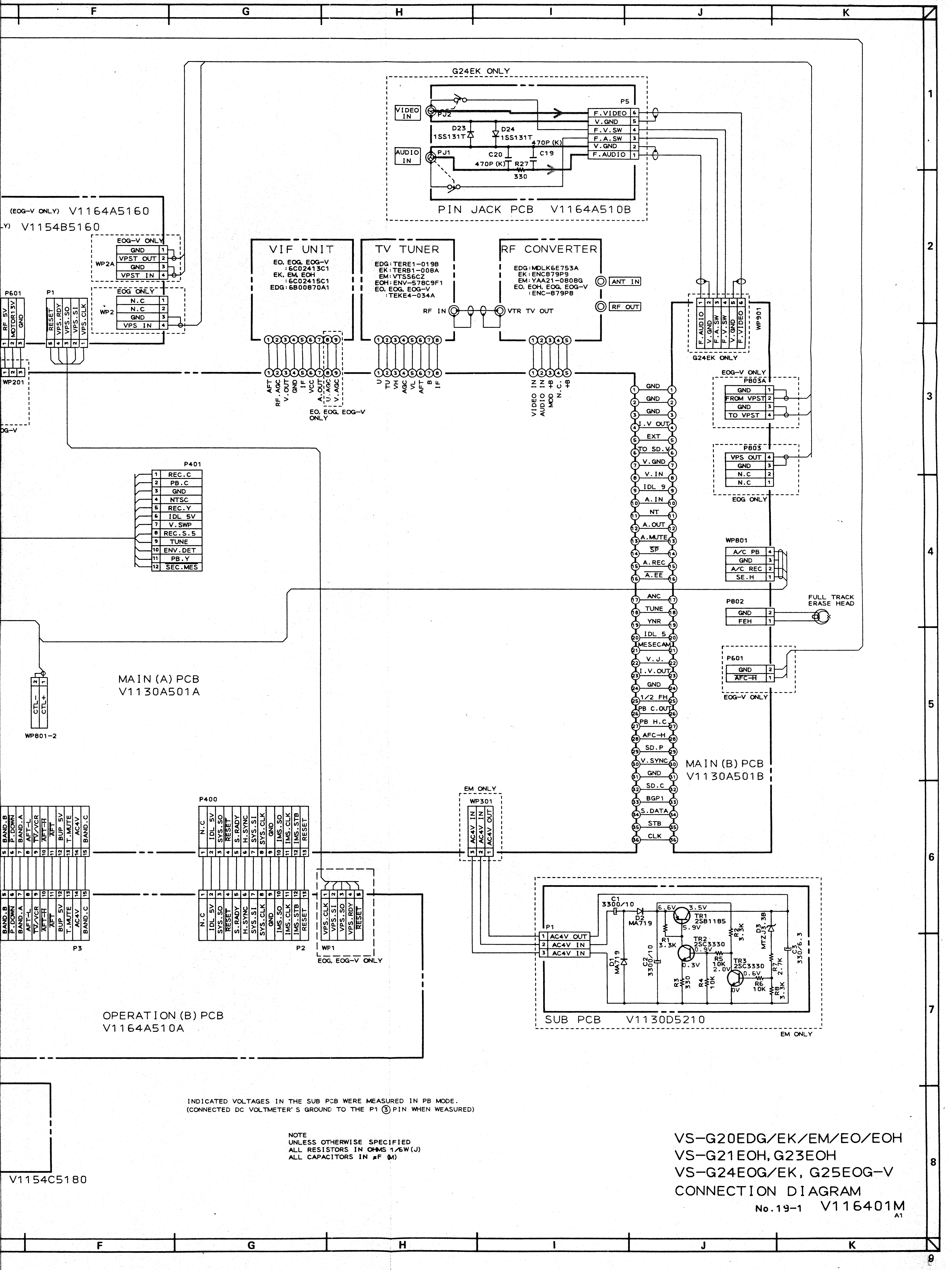
6
7
8
DIODE PCB
V1164B508B
(EO, EOH, EOG ONLY)
DIODE PCB
V1130B506C
(EM ONLY)
WF1
POWER SUPPLY PCB
V1164B5120
(EK, EDG ONLY)
V1164B508A
(EO, EOG, EOH ONLY)
POWER SUPPLY (1) PCB
V1130B506A (EM ONLY)
V1161B505A (EOG-V ONLY)
POWER SUPPLY (2) PCB
V1130B506B (EM ONLY)
V1161B505B (EOG-V ONLY)
P1
GND
OPE 5V
IDL 5V
GND
OPE 9/12V
IDL 9/12V
MOTOR13V
UNR
+37V
-35V
AC4V
AC4V
OPE 12V
IDL 12V
VPST/PDC PCB (EOG-V ONLY) V1164A5160
VPS PCB (EOG ONLY) V1154B5160
EOG-V ONLY
AFC H
GND
WP3
WP1
A.GND
IDL 5V
IDL12V
P601
RF 5V
MOTOR13V
GND
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP2A
VPST OUT
VPST IN
EOG ONLY
WP2
N.C
VPS IN
WP201
EOG, EOG-V ONLY
WF201
PRE AMP PCB
V1130B5100
VIDEO HEAD
NC
CH1 PB
CH1 REC
CH2 REC
CH2 PB
REC.C
PB.C
NTSC
REC.Y
V.SWP
REC.S.5
TUNE
ENV.DET
PB.Y
SEC.MES
P301
PG
FG
DM POW
M.GND
CONT
DRUM MOTOR BLK
P302
F/R̄
LIMIT
CM.POW
P.GND
CAPSTAN MOTOR
(RF-370C15370)
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
A/C PB
A/C REC
S E
CTL-
CTL+
A/C HEAD PCB
V1102B5120
WP801-2
MAIN (A) P
V1130A50
P303
S.SEN
RSW.1
RSW.2
RSW.3
RSW.4
T.REEL.P
END.SEN
S.REEL.P
LM+
LM-
REC.SAF
P304
-35V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
BAND.C
P3
SW1
MODE DETECT SW
RSW 1
RSW 2
RSW 3
RSW 4
REC SAFETY SW
LOADING MOTOR
RF-370C15370
JW1
JW2
TR4
PT493F
TR2
PT4800
D2
GL4800
D1
GL451
R1
62
TR1
PN268
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B
OPERATION (
V1164A510A
P4
S-VHS SW
S-VHS TYPE DETECT SW
(NOR:ON)
S-SWITCH PCB V1154C5180
:B (POWER SUPPLY) LINE
:AUDIO REC SIGNAL
:VIDEO REC SIGNAL


F
G
H
I
J
K
1
2
3
4
5
6
7
8
G24EK ONLY
VIDEO IN
AUDIO IN
PJ2
PJ1
D23 1SS131T
D24 1SS131T
470P (K)
C20
C19
470P (K)
R27 330
P5
F.VIDEO 6
V.GND 5
F.V.SW 4
F.A.SW 3
V.GND 2
F.AUDIO 1
PIN JACK PCB V1164A510B
(EOG-V ONLY) V1164A5160
V1154B5160
EOG-V ONLY
WP2A
GND 1
VPST OUT 2
GND 3
VPST IN 4
EOG ONLY
WP2
N.C 1
N.C 2
GND 3
VPS IN 4
P601
RF 5V
MOTOR13V
GND
P1
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP201
VIF UNIT
EO, EOG, EOG-V :6C02413C1
EK, EM, EOH :6C02415C1
EDG:6B00870A1
TV TUNER
EDG:TERE1-019B
EK:TERB1-008A
EM:VTSS6CZ
EOH:ENV-57BC9F1
EO, EOG, EOG-V :TEKE4-034A
RF IN
VTR TV OUT
RF CONVERTER
EDG:MDLK6E753A
EK:ENCB79P9
EM:YAA21-0808G
EO, EOH, EOG, EOG-V :ENC-879P8
ANT IN
RF OUT
AFT
RF.AGC
V.OUT
GND
IF
VCC
A.OUT
U.AGC
V.AGC
EO, EOG, EOG-V ONLY
U
TU
VH
AGC
VL
AFT
B
IF
VIDEO IN
AUDIO IN
MOD +B
N.C.
+B
WP901
F.AUDIO
V.GND
F.A.SW
F.V.SW
V.GND
F.VIDEO
G24EK ONLY
EOG-V ONLY
P803A
GND 1
FROM VPST 2
GND 3
TO VPST 4
P803
VPS OUT 4
GND 3
N.C 2
N.C 1
EOG ONLY
WP801
A/C PB 4
GND 3
A/C REC 2
SE.H 1
P802
GND 2
FEH 1
FULL TRACK ERASE HEAD
P601
GND 2
AFC-H 1
EOG-V ONLY
1 GND
2 GND
3 GND
4 I.V OUT
5 EXT
6 TO SD.V
7 V.GND
8 V.IN
9 IDL 9
10 A.IN
11 NT
12 A.OUT
13 A.MUTE
14 SP
15 A.REC
16 A.EE
17 ANC
18 TUNE
19 YNR
20 IDL 5
21 MESECAM
22 V.J.
23 I.V.OUT
24 GND
25 1/2 FH
26 PB C.OUT
27 PB H.C
28 AFC-H
29 SD.P
30 V.SYNC
31 GND
32 SD.C
33 BGP1
34 S.DATA
35 STB
36 CLK
MAIN (B) PCB V1130A501B
P401
1 REC.C
2 PB.C
3 GND
4 NTSC
5 REC.Y
6 IDL 5V
7 V.SWP
8 REC.S.5
9 TUNE
10 ENV.DET
11 PB.Y
12 SEC.MES
MAIN (A) PCB V1130A501A
CTL-
CTL+
WP801-2
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
P3
P400
N.C
IDL 5V
SYS.SO
RESET
S.RADY
H.SYNC
SYS.SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
P2
WP1
VPS.CLK
VPS.SI
VPS.SO
VPS.RDY
RESET
EOG, EOG-V ONLY
EM ONLY
WP301
AC4V IN
AC4V IN
AC4V OUT
OPERATION (B) PCB V1164A510A
P1
1 AC4V OUT
2 AC4V IN
3 AC4V IN
C1 3300/10
D2 MA719
6.6V
3.5V
TR1 2SB1185
5.9V
R1 3.3K
TR2 2SC3330
0.9V
R2 3.3K
D3 MTZJ3.3B
C3 330/6.3
D1 MA719
C2 3300/10
0.3V
R5 10K
2.0V
TR3 2SC3330
0.6V
R7 2.7K
R3 330
R4 10K
0V
R6 10K
R8 3.3K
SUB PCB V1130D5210
EM ONLY
V1154C5180

INDICATED VOLTAGES IN THE SUB PCB WERE MEASURED IN PB MODE.
(CONNECTED DC VOLTMETER'S GROUND TO THE P1 ③ PIN WHEN MEASURED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF (M)

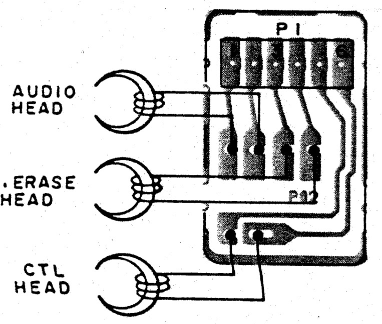
VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
CONNECTION DIAGRAM
No.19-1 V116401M
A1


F
G
H
I
J
K
1
2
3
4
5
6
7
8
G24EK ONLY
VIDEO IN
AUDIO IN
PJ2
PJ1
D23 1SS131T
D24 1SS131T
C20 470P (K)
C19 470P (K)
R27 330
P5
F.VIDEO 6
V.GND 5
F.V.SW 4
F.A.SW 3
V.GND 2
F.AUDIO 1
PIN JACK PCB V1164A510B
(EOG-V ONLY) V1164A5160
V1154B5160
EOG-V ONLY
WP2A
GND 1
VPST OUT 2
GND 3
VPST IN 4
EOG ONLY
WP2
N.C 1
N.C 2
GND 3
VPS IN 4
P601
RF 5V
MOTOR13V
GND
P1
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP201
VIF UNIT
EO, EOG, EOG-V :6C02413C1
EK, EM, EOH :6C02415C1
EDG:6B00870A1
TV TUNER
EDG:TERE1-019B
EK:TERB1-008A
EM:VTSS6CZ
EOH:ENV-57BC9F1
EO, EOG, EOG-V :TEKE4-034A
RF IN
VTR TV OUT
RF CONVERTER
EDG:MDLK6E753A
EK:ENCB79P9
EM:YAA21-0808G
EO, EOH, EOG, EOG-V :ENC-879P8
ANT IN
RF OUT
AFT
RF.AGC
V.OUT
GND
IF
VCC
A.OUT
U.AGC
V.AGC
EO, EOG, EOG-V ONLY
U
TU
VH
AGC
VL
AFT
B
IF
VIDEO IN
AUDIO IN
MOD +B
N.C.
+B
WP901
F.AUDIO 1
V.GND 2
F.A.SW 3
F.V.SW 4
V.GND 5
F.VIDEO 6
G24EK ONLY
EOG-V ONLY
P803A
GND 1
FROM VPST 2
GND 3
TO VPST 4
P803
VPS OUT 4
GND 3
N.C 2
N.C 1
EOG ONLY
WP801
A/C PB 4
GND 3
A/C REC 2
SE.H 1
P802
GND 2
FEH 1
FULL TRACK ERASE HEAD
P601
GND 2
AFC-H 1
EOG-V ONLY
1 GND
2 GND
3 GND
4 I.V OUT
5 EXT
6 TO SD.V
7 V.GND
8 V.IN
9 IDL 9
10 A.IN
11 NT
12 A.OUT
13 A.MUTE
14 SP
15 A.REC
16 A.EE
17 ANC
18 TUNE
19 YNR
20 IDL 5
21 MESECAM
22 V.J.
23 I.V.OUT
24 GND
25 1/2 FH
26 PB C.OUT
27 PB H.C.
28 AFC-H
29 SD.P
30 V.SYNC
31 GND
32 SD.C
33 BGP1
34 S.DATA
35 STB
36 CLK
MAIN (B) PCB V1130A501B
P401
1 REC.C
2 PB.C
3 GND
4 NTSC
5 REC.Y
6 IDL 5V
7 V.SWP
8 REC.S.5
9 TUNE
10 ENV.DET
11 PB.Y
12 SEC.MES
MAIN (A) PCB V1130A501A
CTL-
CTL+
WP801-2
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
P3
P400
N.C
IDL 5V
SYS.SO
RESET
S.RADY
H.SYNC
SYS.SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
P2
VPS.CLK
VPS.SI
VPS.SO
VPS.RDY
RESET
WP1
EOG, EOG-V ONLY
EM ONLY
WP301
AC4V IN
AC4V IN
AC4V OUT
OPERATION (B) PCB V1164A510A
P1
1 AC4V OUT
2 AC4V IN
3 AC4V IN
C1 3300/10
D2 MA719
D1 MA719
C2 3300/10
R1 3.3K
R3 330
R4 10K
TR1 2SB1185
TR2 2SC3330
TR3 2SC3330
R5 10K
R6 10K
R2 3.3K
R7 2.7K
R8 3.3K
D3 MTZJ3.3B
C3 330/6.3
6.6V
3.5V
5.9V
0.9V
0.3V
2.0V
0.6V
0V
SUB PCB V1130D5210
EM ONLY
V1154C5180

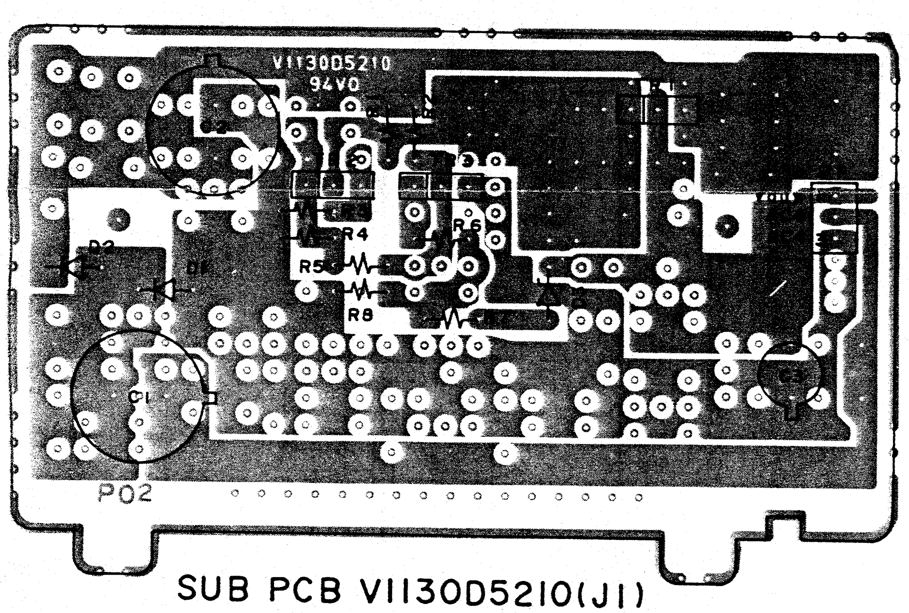
INDICATED VOLTAGES IN THE SUB PCB WERE MEASURED IN PB MODE.
(CONNECTED DC VOLTMETER'S GROUND TO THE P1 ③ PIN WHEN MEASURED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN µF (M)

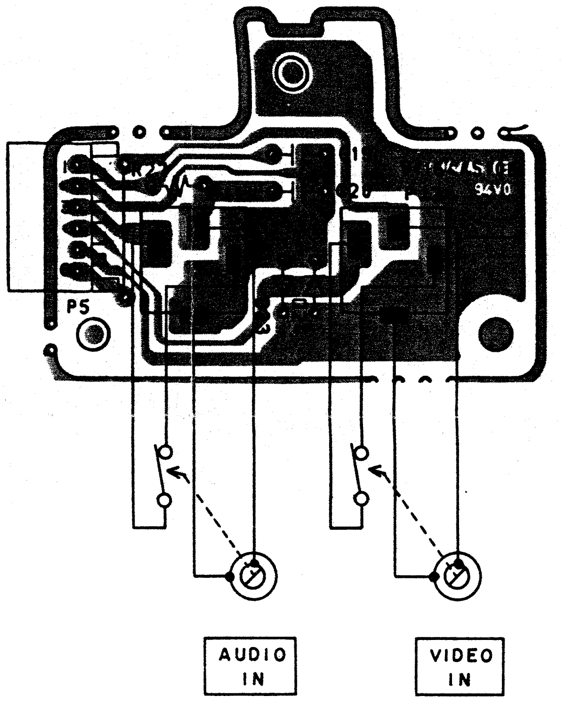
VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
CONNECTION DIAGRAM
No.19-1 V116401M
A1


P1
AUDIO HEAD
S.ERASE HEAD
P12
CTL HEAD

A/C HEAD PCB
V1102B5120(J1)

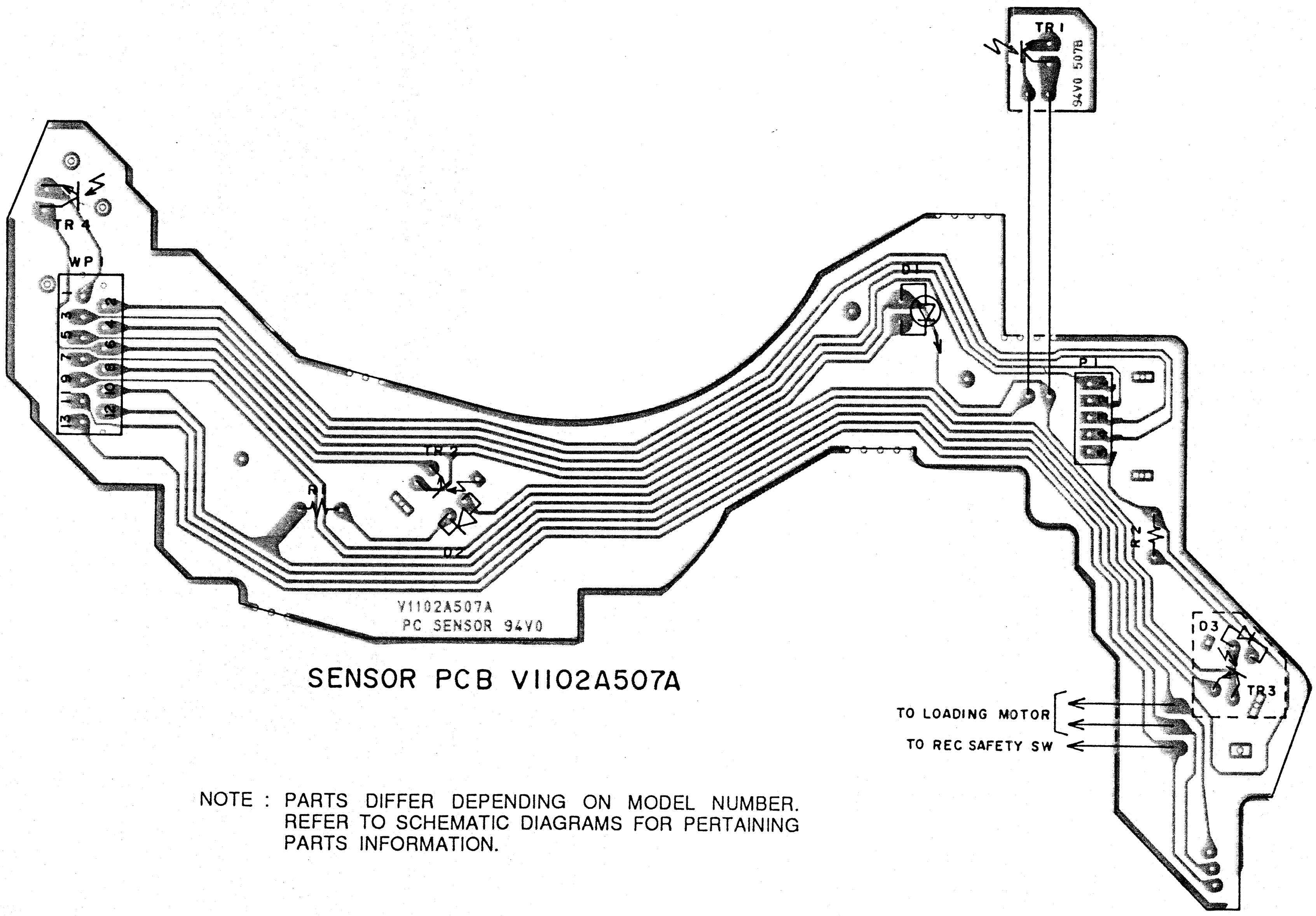

V1130D5210
94V0
D2
D6
R4
R5
R6
R8
C1
P02

SUB PCB V1130D5210(J1)
(EM ONLY)


P5
94V0
AUDIO IN
VIDEO IN

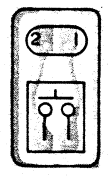
PIN JACK PCB V1164A510B(G24EK ONLY)

SENSOR(S) PCB
V1102A507B


TR1
94V0 507B
TR4
WP1
TR2
R1
D2
D1
P1
R2
D3
TR3
V1102A507A
PC SENSOR 94V0
TO LOADING MOTOR
TO REC SAFETY SW

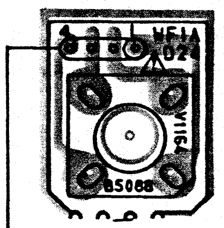
SENSOR PCB V1102A507A

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING PARTS INFORMATION.

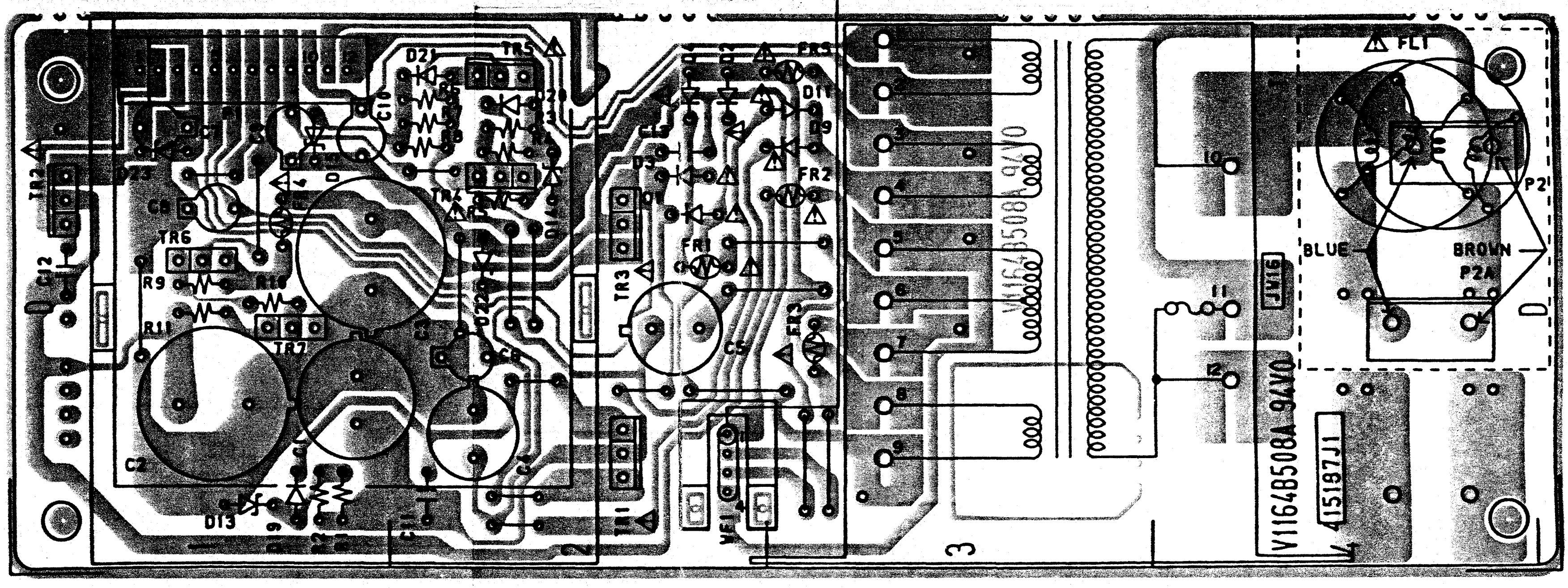


S-SWITCH PCB
V1154C5180

DIODE PCB
V1164B508B(J1)


WF1A
D22
V1164
B508B

EK ONLY)

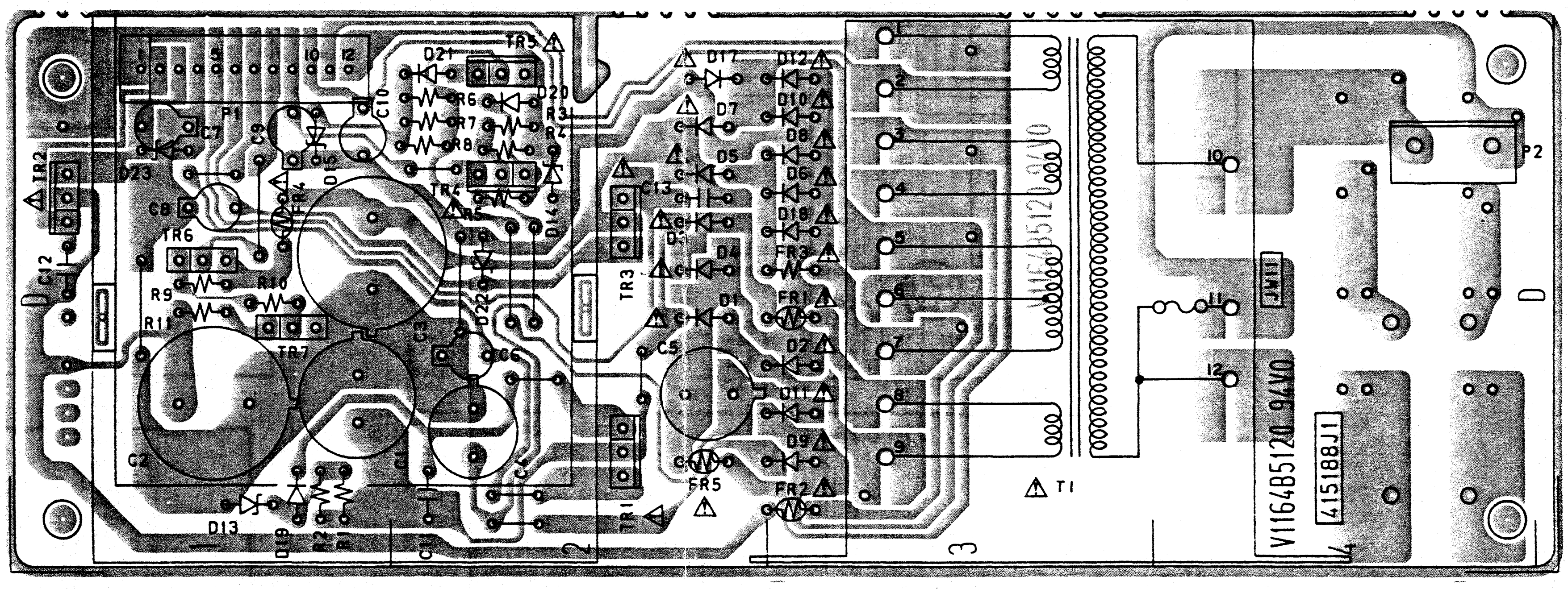

D21
TR5
C10
D20
D11
D9
FR3
FR2
FR1
TR2
TR4
C9
C8
TR6
R9
R10
R11
TR7
TR3
C5
C12
C2
D13
TR1
WF1
FL1
P2
BLUE
BROWN
P2A
JW16
V1164B508A 94V0
V1164B508A(J1)
415197J1
1
2
3
4
5
6
7
8
9
10
11
12

POWER SUPPLY PCB V1164B508A(J1) (EO,EOG,EOH ONLY)

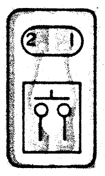
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

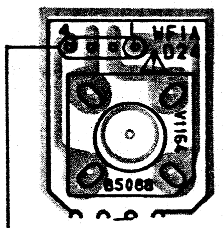

D21
TR5
C10
R6
R7
R8
R3
R4
D20
P1
C7
C9
D23
TR2
C8
TR6
R9
R10
R11
TR7
C12
C2
D13
D19
C3
C6
D22
TR3
C13
D17
D12
D7
D10
D8
D5
D6
D18
D4
D3
FR3
D1
FR1
C5
D2
D11
D9
FR5
FR2
TR1
T1
P2
JW11
V1164B5120 94V0
V1164B5120(J1)
415188J1
1
2
3
4
5
6
7
8
9
10
11
12

POWER SUPPLY PCB V1164B5120(J1) (EK.EDG ONLY)

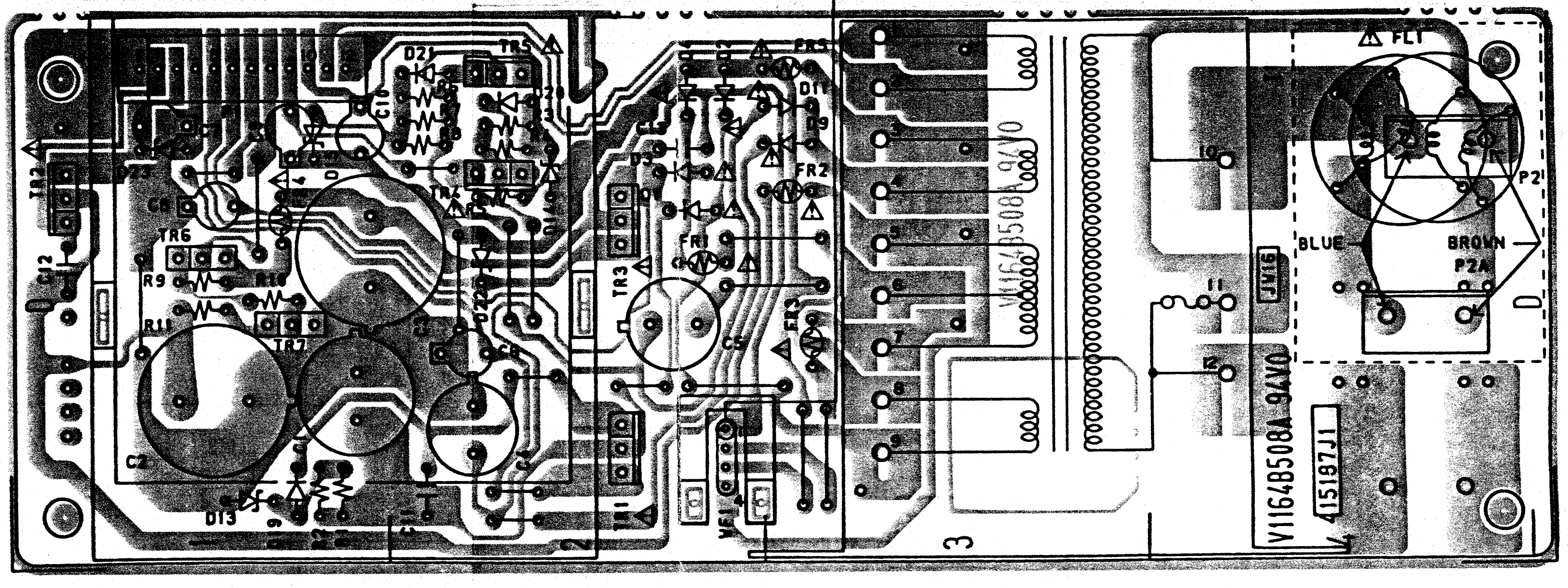


S-SWITCH PCB
V1154C5180

DIODE PCB
V1164B508B(J1)



EK ONLY)



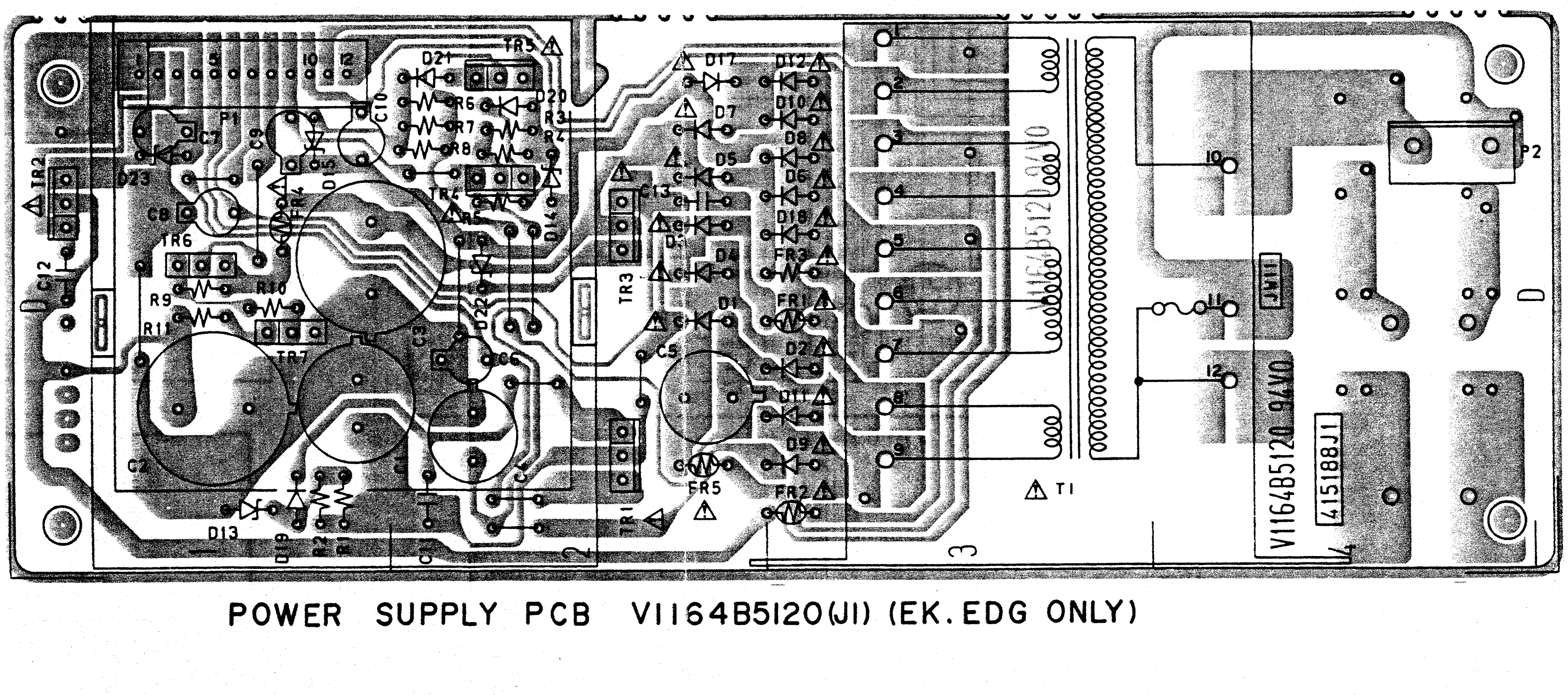
TR5
D21
C10
TR2
D23
C8
TR6
R9
R10
R11
TR7
C12
C2
D13
TR3
C5
FR1
FR2
FR3
FR5
D11
D9
TR1
WF1
FL1
BLUE
BROWN
P2
P2A
V1164B508A 94V0
415197J1

POWER SUPPLY PCB V1164B508A(J1) (E0,E0G,E0H ONLY)

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

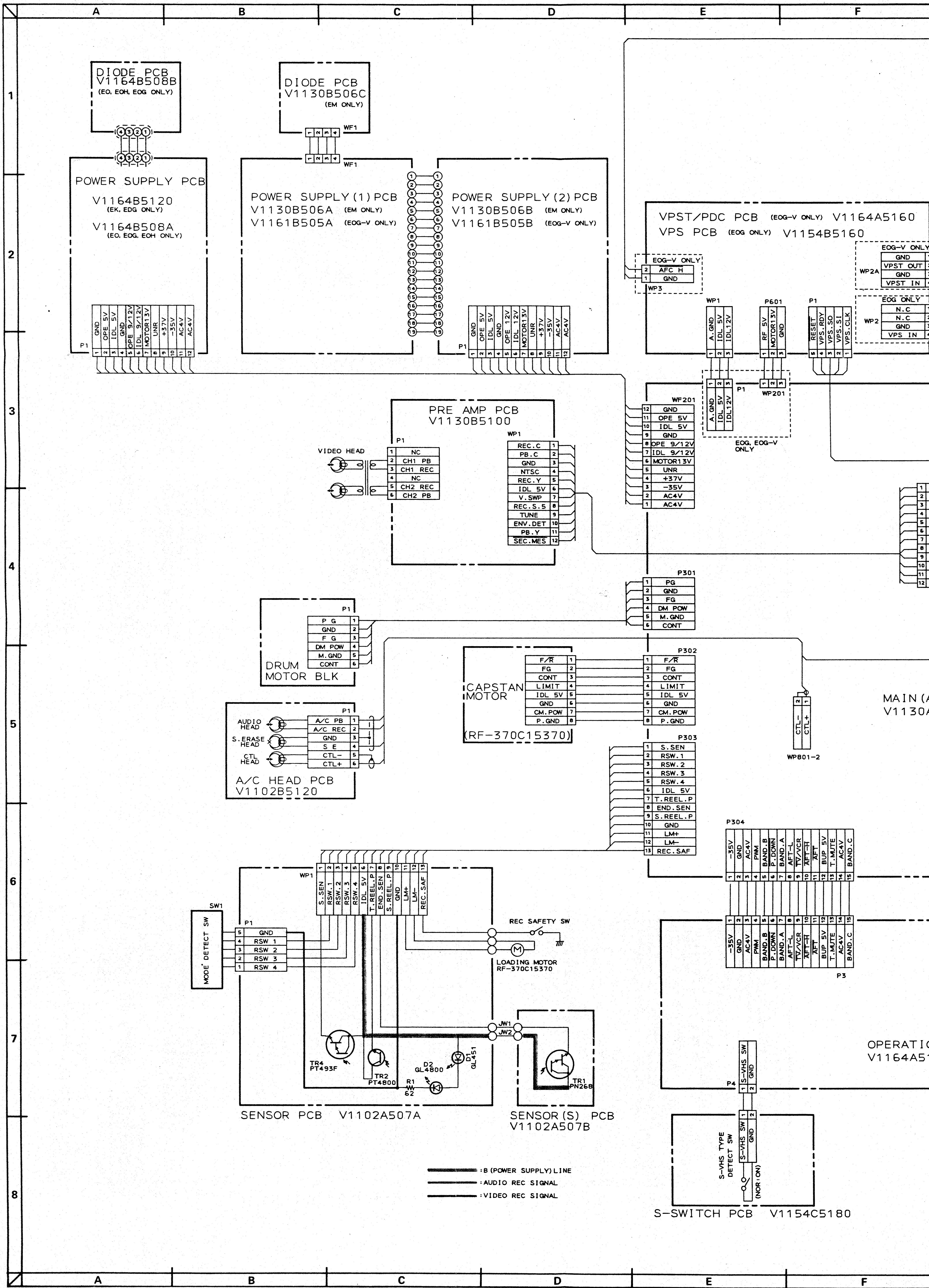
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

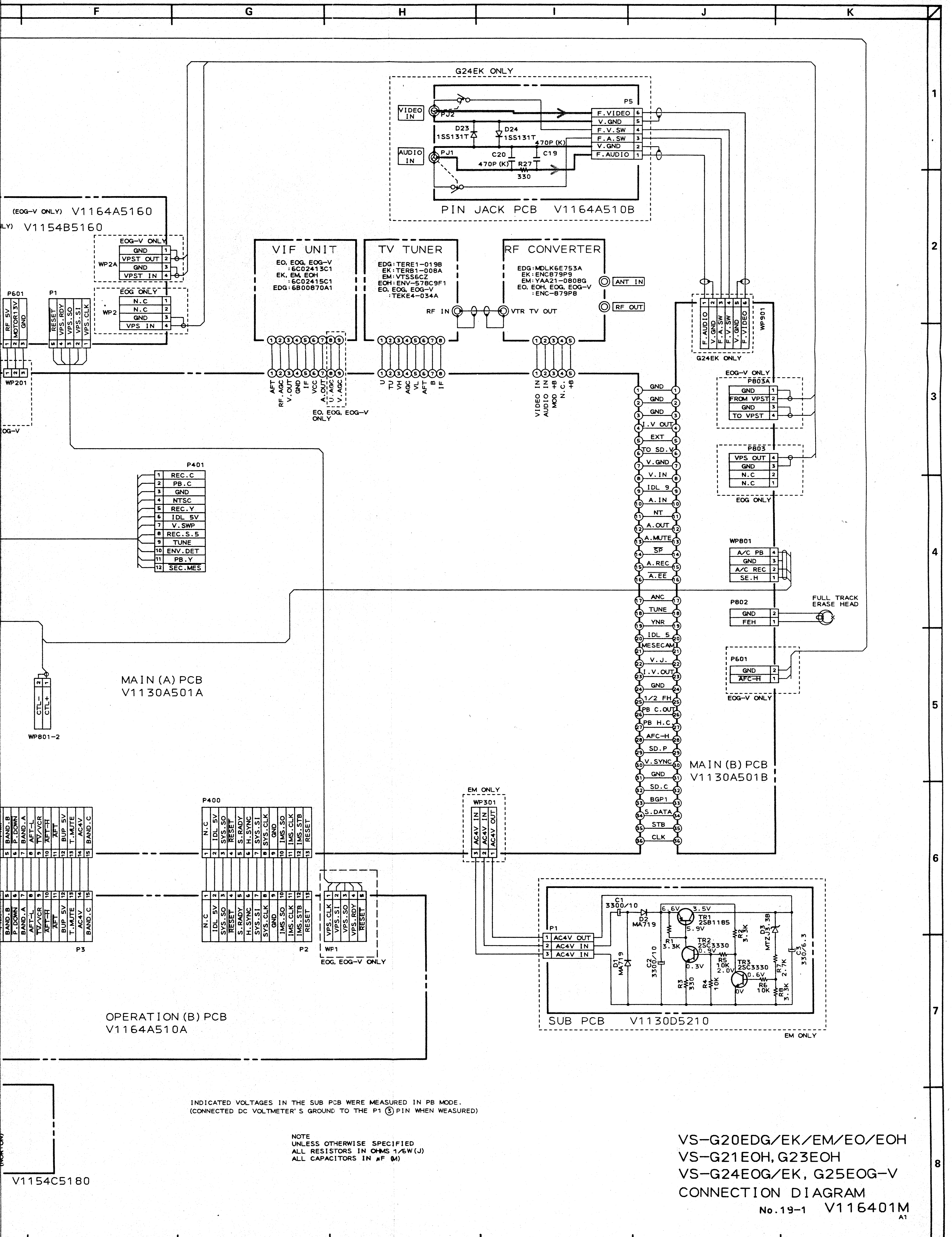
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



TR5
D21
R6
R7
R8
R3
R4
C10
C7
C9
P1
D23
TR2
C8
TR6
R9
R10
R11
TR7
C12
C2
D13
D17
D12
D7
D10
D8
D5
D6
C13
D18
D4
FR3
D1
FR1
C5
D2
D11
D3
FR5
FR2
TR3
TR1
T1
P2
V1164B5120 94V0
415188J1

POWER SUPPLY PCB V1164B5120(J1) (EK.EDG ONLY)


A
B
C
D
E
F
1
2
3
4
5
6
7
8
DIODE PCB
V1164B508B
(EO, EOH, EOG ONLY)
DIODE PCB
V1130B506C
(EM ONLY)
WF1
POWER SUPPLY PCB
V1164B5120
(EK, EDG ONLY)
V1164B508A
(EO, EOG, EOH ONLY)
P1
GND
OPE 5V
IDL 5V
GND
OPE 9/12V
IDL 9/12V
MOTOR13V
UNR
+37V
-35V
AC4V
AC4V
POWER SUPPLY (1) PCB
V1130B506A (EM ONLY)
V1161B505A (EOG-V ONLY)
POWER SUPPLY (2) PCB
V1130B506B (EM ONLY)
V1161B505B (EOG-V ONLY)
GND
OPE 5V
IDL 5V
GND
OPE 12V
IDL 12V
MOTOR13V
UNR
+37V
-35V
AC4V
AC4V
VPST/PDC PCB (EOG-V ONLY) V1164A5160
VPS PCB (EOG ONLY) V1154B5160
EOG-V ONLY
AFC H
GND
WP3
WP1
A.GND
IDL 5V
IDL12V
P601
RF 5V
MOTOR13V
GND
P1
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP2A
EOG-V ONLY
GND
VPST OUT
GND
VPST IN
WP2
EOG ONLY
N.C
N.C
GND
VPS IN
P1
WP201
EOG, EOG-V ONLY
WF201
GND
OPE 5V
IDL 5V
GND
OPE 9/12V
IDL 9/12V
MOTOR13V
UNR
+37V
-35V
AC4V
AC4V
PRE AMP PCB
V1130B5100
VIDEO HEAD
P1
NC
CH1 PB
CH1 REC
NC
CH2 REC
CH2 PB
WP1
REC.C
PB.C
GND
NTSC
REC.Y
IDL 5V
V.SWP
REC.S.5
TUNE
ENV.DET
PB.Y
SEC.MES
P301
PG
GND
FG
DM POW
M.GND
CONT
DRUM MOTOR BLK
P G
GND
F G
DM POW
M.GND
CONT
P302
F/R̄
FG
CONT
LIMIT
IDL 5V
GND
CM.POW
P.GND
CAPSTAN MOTOR
(RF-370C15370)
CTL-
CTL+
WP801-2
MAIN (A
V1130A
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
A/C PB
A/C REC
GND
S E
CTL-
CTL+
A/C HEAD PCB
V1102B5120
P303
S.SEN
RSW.1
RSW.2
RSW.3
RSW.4
IDL 5V
T.REEL.P
END.SEN
S.REEL.P
GND
LM+
LM-
REC.SAF
P304
-35V
GND
AC4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
P3
SW1
MODE DETECT SW
P1
GND
RSW 1
RSW 2
RSW 3
RSW 4
WP1
S.SEN
RSW.1
RSW.2
RSW.3
RSW.4
IDL 5V
T.REEL.P
END.SEN
S.REEL.P
GND
LM+
LM-
REC.SAF
REC SAFETY SW
LOADING MOTOR
RF-370C15370
JW1
JW2
TR4
PT493F
TR2
PT4800
D2
GL4800
D1
GL451
R1
62
TR1
PN268
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B
OPERATIO
V1164A51
P4
S-VHS SW
GND
S-VHS TYPE DETECT SW
(NOR : ON)
S-SWITCH PCB V1154C5180
: B (POWER SUPPLY) LINE
: AUDIO REC SIGNAL
: VIDEO REC SIGNAL

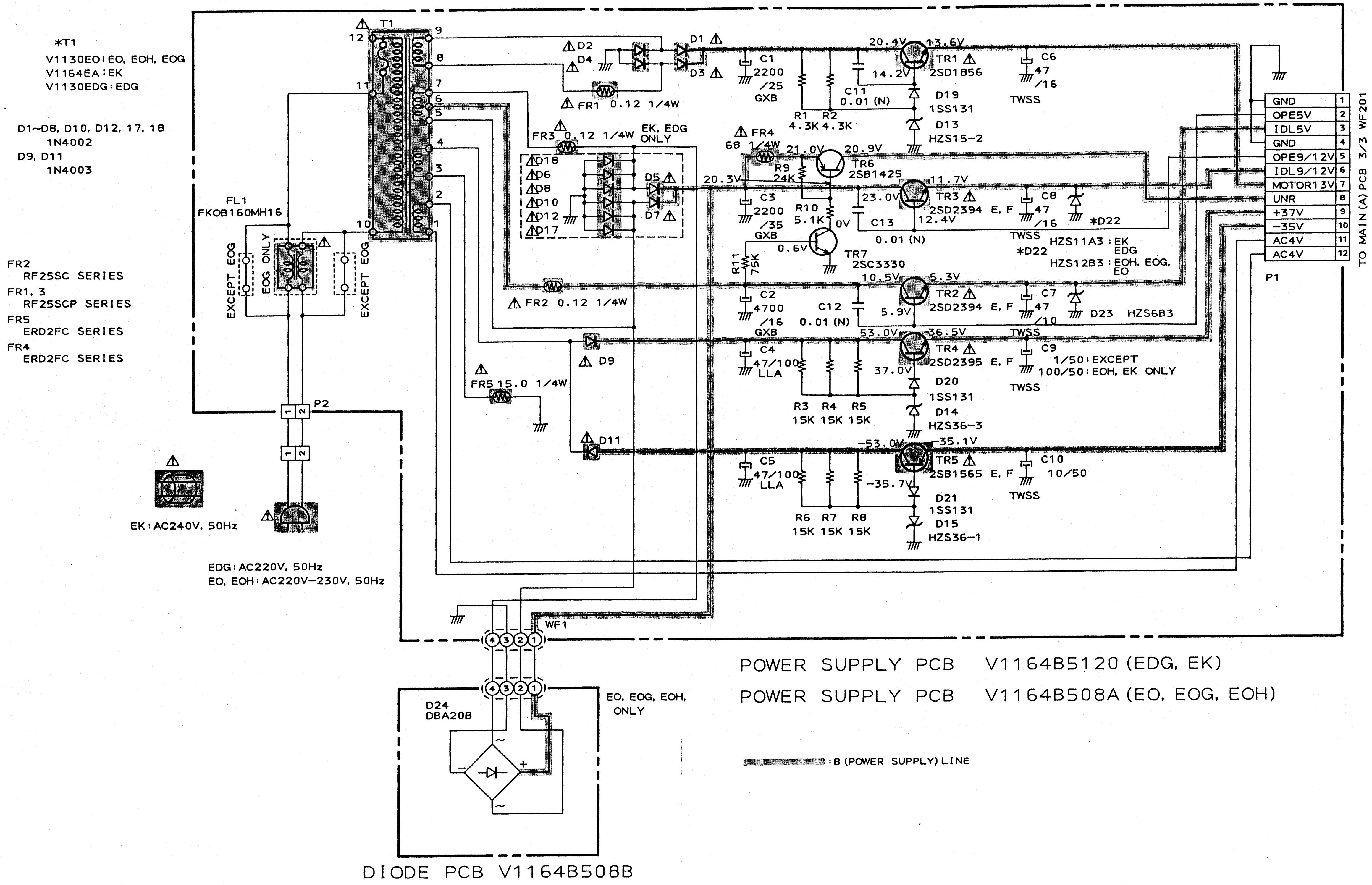

F
G
H
I
J
K
1
2
3
4
5
6
7
8
9
G24EK ONLY
VIDEO IN
AUDIO IN
PJ2
PJ1
D23 1SS131T
D24 1SS131T
C20 470P (K)
C19 470P (K)
R27 330
P5
F.VIDEO 6
V.GND 5
F.V.SW 4
F.A.SW 3
V.GND 2
F.AUDIO 1
PIN JACK PCB V1164A510B
(EOG-V ONLY) V1164A5160
V1154B5160
EOG-V ONLY
WP2A
GND 1
VPST OUT 2
GND 3
VPST IN 4
EOG ONLY
WP2
N.C 1
N.C 2
GND 3
VPS IN 4
P601
RF 5V
MOTOR13V
GND
P1
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
WP201
EOG-V
VIF UNIT
EO, EOG, EOG-V :6C02413C1
EK, EM, EOH :6C02415C1
EDG:6B00870A1
AFT
RF.AGC
V.OUT
GND
IF
VCC
A.OUT
U.AGC
V.AGC
EO, EOG, EOG-V ONLY
TV TUNER
EDG:TERE1-019B
EK:TERB1-008A
EM:VTSS6CZ
EOH:ENV-578C9F1
EO, EOG, EOG-V :TEKE4-034A
RF IN
U
TU
VH
AGC
VL
AFT
B
IF
RF CONVERTER
EDG:MDLK6E753A
EK:ENC879P9
EM:YAA21-0808G
EO, EOH, EOG, EOG-V :ENC-879P8
ANT IN
RF OUT
VTR TV OUT
VIDEO IN
AUDIO IN
MOD +B
N.C.
+B
WP901
F.AUDIO 1
V.GND 2
F.A.SW 3
F.V.SW 4
V.GND 5
F.VIDEO 6
G24EK ONLY
EOG-V ONLY
P803A
GND 1
FROM VPST 2
GND 3
TO VPST 4
P803
VPS OUT 4
GND 3
N.C 2
N.C 1
EOG ONLY
WP801
A/C PB 4
GND 3
A/C REC 2
SE.H 1
P802
GND 2
FEH 1
FULL TRACK ERASE HEAD
P601
GND 2
AFC-H 1
EOG-V ONLY
1 GND
2 GND
3 GND
4 I.V OUT
5 EXT
6 TO SD.V
7 V.GND
8 V.IN
9 IDL 9
10 A.IN
11 NT
12 A.OUT
13 A.MUTE
14 SP
15 A.REC
16 A.EE
17 ANC
18 TUNE
19 YNR
20 IDL 5
21 MESECAM
22 V.J.
23 I.V.OUT
24 GND
25 1/2 FH
26 PB C.OUT
27 PB H.C.
28 AFC-H
29 SD.P
30 V.SYNC
31 GND
32 SD.C
33 BGP1
34 S.DATA
35 STB
36 CLK
MAIN (B) PCB V1130A501B
P401
1 REC.C
2 PB.C
3 GND
4 NTSC
5 REC.Y
6 IDL 5V
7 V.SWP
8 REC.S.5
9 TUNE
10 ENV.DET
11 PB.Y
12 SEC.MES
MAIN (A) PCB V1130A501A
CTL-
CTL+
WP801-2
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5V
T.MUTE
AC4V
BAND.C
P3
P400
N.C
IDL 5V
SYS.SO
RESET
S.RADY
H.SYNC
SYS.SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
P2
WP1
VPS.CLK
VPS.SI
VPS.SO
VPS.RDY
RESET
EOG, EOG-V ONLY
EM ONLY
WP301
AC4V IN
AC4V IN
AC4V OUT
OPERATION (B) PCB V1164A510A
P1
1 AC4V OUT
2 AC4V IN
3 AC4V IN
C1 3300/10
D2 MA719
6.6V
3.5V
TR1 2SB1185
5.9V
R1 3.3K
R2 3.3K
TR2 2SC3330
0.9V
D1 MA719
C2 3300/10
0.3V
R3 330
R4 10K
R5 10K
2.0V
TR3 2SC3330
0.6V
0V
R6 10K
R7 2.7K
R8 3.3K
D3 MTZJ3.3B
C3 330/6.3
SUB PCB V1130D5210
EM ONLY
V1154C5180

INDICATED VOLTAGES IN THE SUB PCB WERE MEASURED IN PB MODE.
(CONNECTED DC VOLTMETER'S GROUND TO THE P1 ③ PIN WHEN MEASURED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF (M)

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
CONNECTION DIAGRAM

No.19-1 V116401M
A1


A B C D E F G H I J K
1 2 3 4 5 6 7 8
*T1
V1130EO: EO, EOH, EOG
V1164EA: EK
V1130EDG: EDG
D1~D8, D10, D12, 17, 18
1N4002
D9, D11
1N4003
FR2
RF25SC SERIES
FR1, 3
RF25SCP SERIES
FR5
ERD2FC SERIES
FR4
ERD2FC SERIES
T1
FL1
FKOB160MH16
EXCEPT EOG
EOG ONLY
EXCEPT EOG
P2
EK: AC240V, 50Hz
EDG: AC220V, 50Hz
EO, EOH: AC220V–230V, 50Hz
D2
D4
D1
D3
FR1 0.12 1/4W
FR3 0.12 1/4W
EK, EDG ONLY
D18
D6
D8
D10
D12
D17
D5
D7
FR2 0.12 1/4W
D9
FR5 15.0 1/4W
D11
C1 2200 /25 GXB
R1 4.3K
R2 4.3K
C11 0.01 (N)
20.4V
13.6V
14.2V
TR1 2SD1856
D19 1SS131
D13 HZS15-2
C6 47 /16 TWSS
FR4 68 1/4W
21.0V
20.9V
R9 24K
TR6 2SB1425
20.3V
C3 2200 /35 GXB
R10 5.1K
0V
23.0V
11.7V
12.4V
C13 0.01 (N)
TR3 2SD2394 E, F
C8 47 /16 TWSS
*D22
HZS11A3: EK EDG
*D22 HZS12B3: EOH, EOG, EO
0.6V
R11 75K
TR7 2SC3330
10.5V
5.3V
C2 4700 /16 GXB
C12 0.01 (N)
5.9V
TR2 2SD2394 E, F
C7 47 /10 TWSS
D23 HZS6B3
53.0V
36.5V
C4 47/100 LLA
37.0V
TR4 2SD2395 E, F
C9 1/50: EXCEPT 100/50: EOH, EK ONLY TWSS
R3 15K
R4 15K
R5 15K
D20 1SS131
D14 HZS36-3
-53.0V
-35.1V
C5 47/100 LLA
-35.7V
TR5 2SB1565 E, F
C10 10/50 TWSS
R6 15K
R7 15K
R8 15K
D21 1SS131
D15 HZS36-1
P1
GND 1
OPE5V 2
IDL5V 3
GND 4
OPE9/12V 5
IDL9/12V 6
MOTOR13V 7
UNR 8
+37V 9
-35V 10
AC4V 11
AC4V 12
TO MAIN (A) PCB 3/3 WF201
WF1
4 3 2 1
4 3 2 1
D24 DBA20B
EO, EOG, EOH, ONLY
POWER SUPPLY PCB V1164B5120 (EDG, EK)
POWER SUPPLY PCB V1164B508A (EO, EOG, EOH)
▬ : B (POWER SUPPLY) LINE
DIODE PCB V1164B508B

ALL R WITHOUT INDICATION ARE 1/6W.
ALL FR WITHOUT INDICATION ARE 1/4W.

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

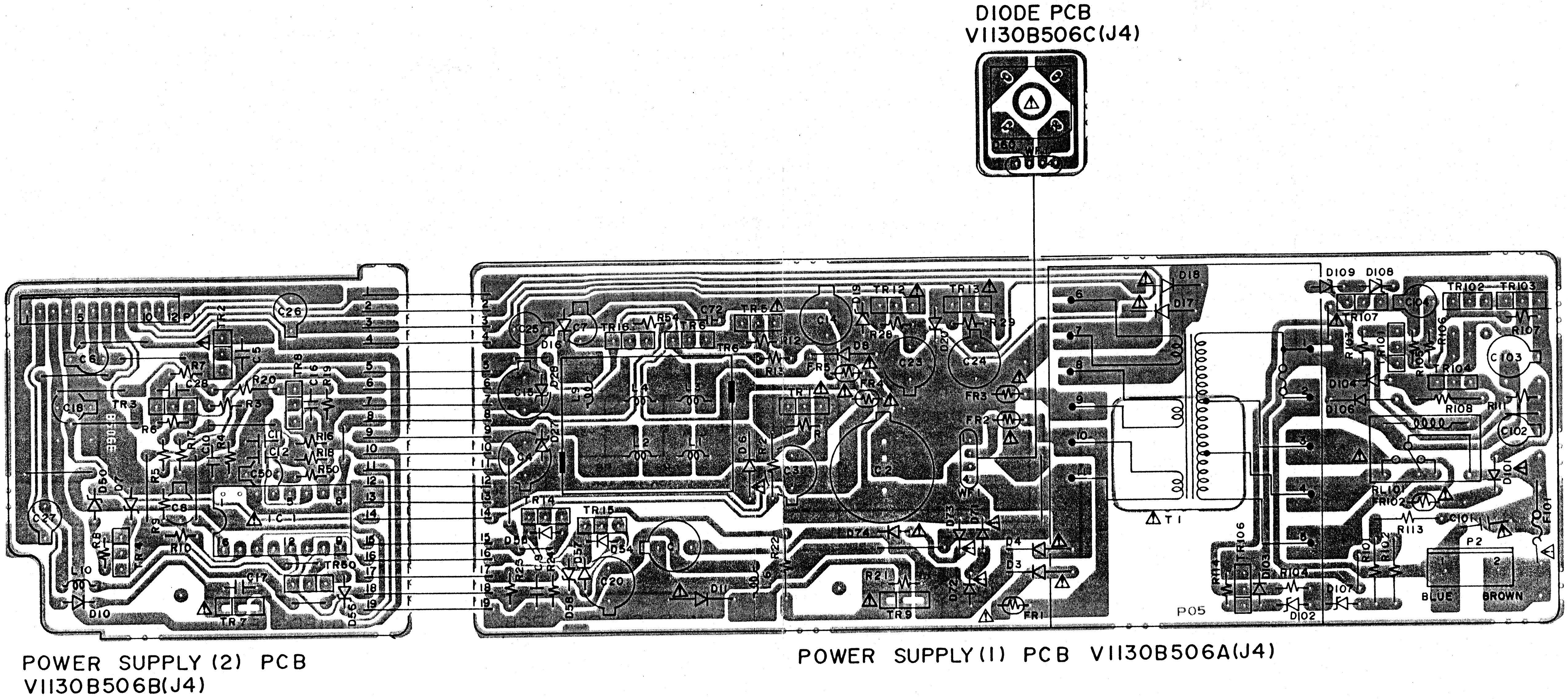
AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLTAGES WERE MEASURED DURING E-E (STOP) MODE
(WITH EOH MODEL)

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

# VS-G20EDG/EK/EO/EOH
# VS-G21EOH, G23EOH
# VS-G24EOG/EK
# POWER SUPPLY & DIODE SCHEMATIC DIAGRAM

No.19-2 V116402M
A2


DIODE PCB
V1130B506C(J4)

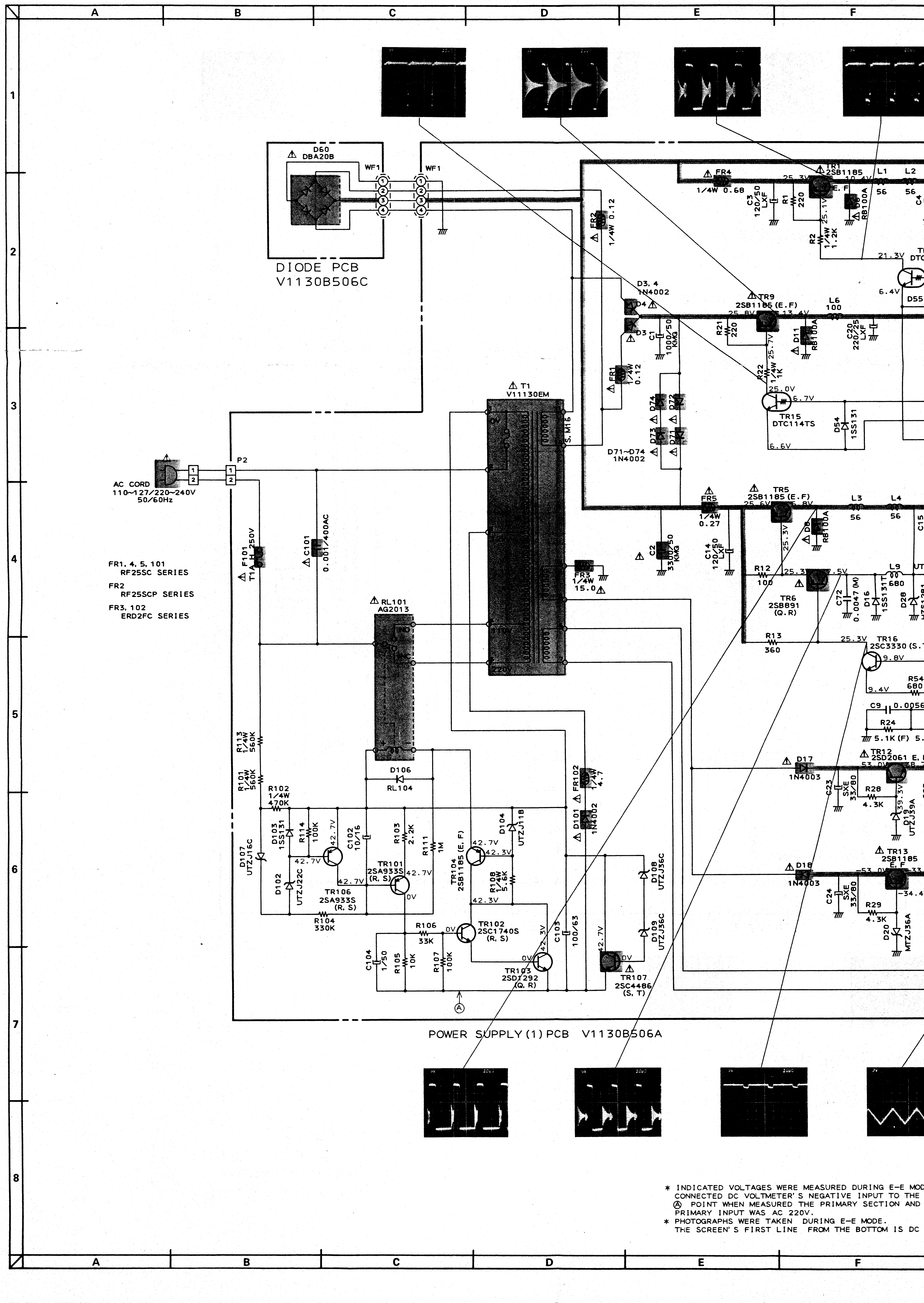
POWER SUPPLY (2) PCB
V1130B506B(J4)

POWER SUPPLY(1) PCB V1130B506A(J4)

T1
P05
P2
BLUE
BROWN
RL101
FR1
FR2
FR3
C2
C103
C102
D109
D108
TR102
TR103
TR107
TR14
TR15
TR7
TR9
IC1

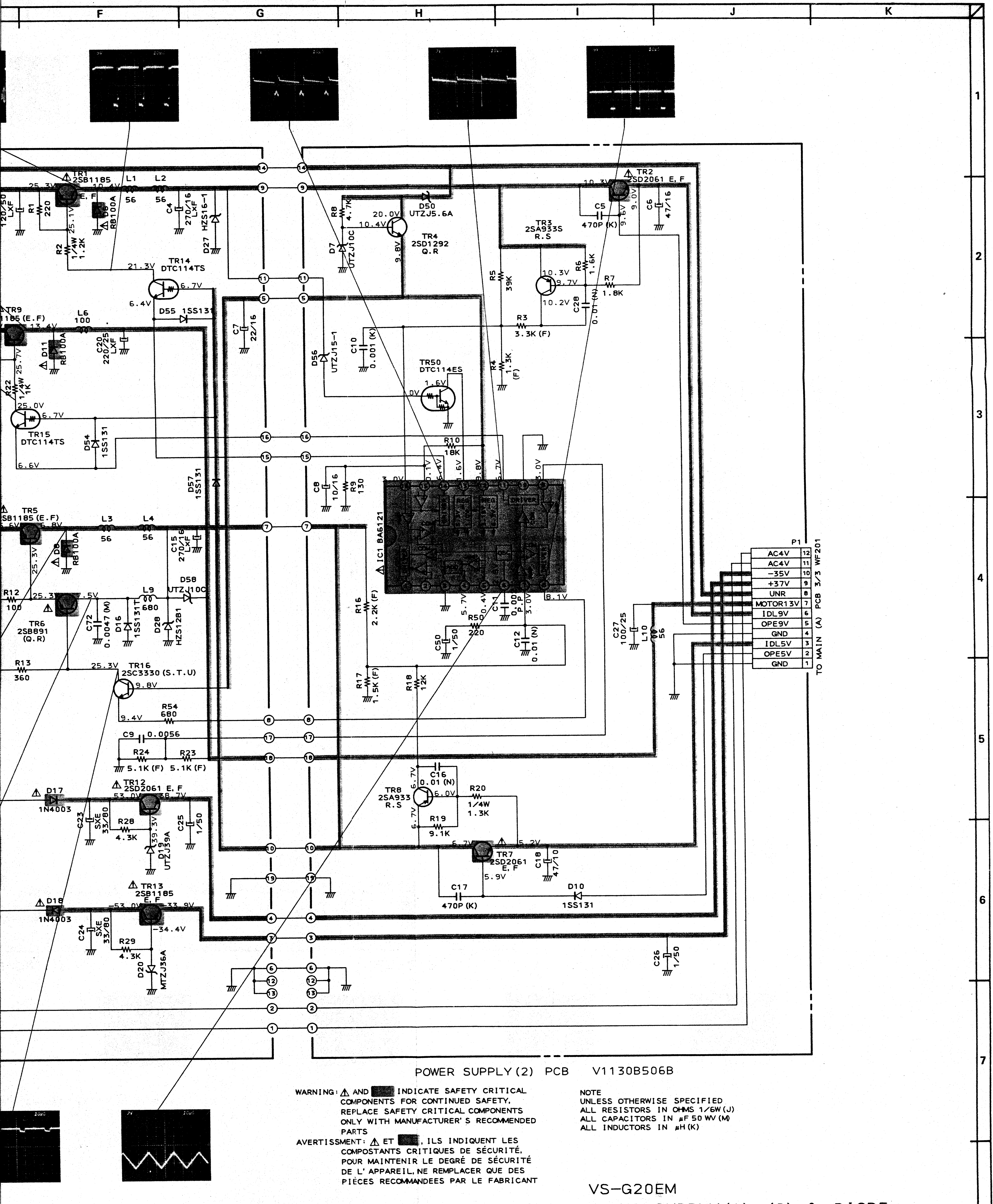
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


A
B
C
D
E
F
1
2
3
4
5
6
7
8
D60
DBA20B
WF1
DIODE PCB
V1130B506C
AC CORD
110~127/220~240V
50/60Hz
P2
F101
T1A H 250V
C101
0.001/400AC
FR1, 4, 5, 101
RF25SC SERIES
FR2
RF25SCP SERIES
FR3, 102
ERD2FC SERIES
T1
V11130EM
S, M16
0V
220V
RL101
AG2013
D106
RL104
R113
1/4W
560K
R101
1/4W
560K
R102
1/4W
470K
D103
1SS131
R114
100K
D107
UTZJ16C
D102
UTZJ22C
42.7V
C102
10/16
TR106
2SA933S
(R, S)
R104
330K
R103
2.2K
R111
1M
TR101
2SA933S
(R, S)
TR104
2SB1185 (E, F)
D104
UTZJ11B
R108
1/4W
5.6K
42.3V
R106
33K
TR102
2SC1740S
(R, S)
TR103
2SD1292
(Q, R)
C104
1/50
R105
10K
R107
100K
C103
100/63
FR102
1/4W
4.7
D101
1N4002
TR107
2SC4486
(S, T)
D108
UTZJ36C
D109
UTZJ36C
FR3
1/4W
15.0
POWER SUPPLY (1) PCB  V1130B506A
FR4
1/4W 0.68
TR1
2SB1185
E, F
25.3V
10.4V
25.1V
C3
120/50
LXF
R1
220
R2
1/4W
1.2K
RB100A
L1
56
L2
56
FR2
1/4W 0.12
21.3V
6.4V
D55
D3, 4
1N4002
D4
D3
C1
1000/50
KMG
FR1
1/4W
0.12
TR9
2SB1185 (E.F)
25.8V
13.4V
R21
220
25.7V
D11
RB100A
L6
100
C20
220/25
LXF
R22
1/4W
1K
25.0V
6.7V
TR15
DTC114TS
D54
1SS131
6.6V
D74
D72
D73
D71
D71~D74
1N4002
FR5
1/4W
0.27
TR5
2SB1185 (E.F)
25.6V
6.8V
RB100A
L3
56
L4
56
C2
3300/50
KMG
C14
120/50
LXF
25.3V
R12
100
TR6
2SB891
(Q.R)
7.5V
C72
0.0047 (M)
D16
1SS131T
L9
680
R13
360
TR16
2SC3330
9.8V
9.4V
R54
680
C9
0.0056
R24
5.1K (F)
D17
1N4003
TR12
2SD2061
53.0V
C23
SXE
33/80
R28
4.3K
39.3V
D19
UTZJ39A
TR13
2SB1185
E, F
-53.0V
-34.4
D18
1N4003
C24
SXE
33/80
R29
4.3K
D20
MTZJ36A

* INDICATED VOLTAGES WERE MEASURED DURING E–E MOD
CONNECTED DC VOLTMETER' S NEGATIVE INPUT TO THE
Ⓐ POINT WHEN MEASURED THE PRIMARY SECTION AND
PRIMARY INPUT WAS AC 220V.

* PHOTOGRAPHS WERE TAKEN DURING E–E MODE.
THE SCREEN' S FIRST LINE FROM THE BOTTOM IS DC


F
G
H
I
J
K
1
2
3
4
5
6
7
8
TR1 2SB1185 E, F
L1 56
L2 56
C4 270/16 LXF
HZS16-1
D27
D100A
R1 220
R2 1/4W 1.2K
TR14 DTC114TS
21.3V
6.7V
6.4V
D55 1SS131
TR9 1185 (E.F)
L6 100
C20 220/25 LXF
D11 RB100A
R22 1/4W 1K
TR15 DTC114TS
25.0V
6.7V
D54 1SS131
6.6V
D57 1SS131
C7 22/16
TR5 SB1185 (E.F)
L3 56
L4 56
C15 270/16 LXF
D8 RB100A
R12 100
TR6 2SB891 (Q.R)
L9 680
D58 UTZJ10C
C72 0.0047 (M)
D16 1SS131T
D28 HZS12B1
R13 360
TR16 2SC3330 (S.T.U)
25.3V
9.8V
9.4V
R54 680
C9 0.0056
R24 5.1K (F)
R23 5.1K (F)
D17 1N4003
TR12 2SD2061 E, F
C23 SXE 33/80
R28 4.3K
D19 UTZJ39A
C25 1/50
TR13 2SB1185 E, F
D18 1N4003
C24 SXE 33/80
R29 4.3K
D20 MTZJ36A
-34.4V
R8 4.7K
D7 UTZJ10C
D50 UTZJ5.6A
20.0V
10.4V
TR4 2SD1292 Q.R
9.8V
D56 UTZJ15-1
C10 0.001 (K)
TR50 DTC114ES
1.6V
0V
R10 18K
C8 10/16
R9 130
IC1 BA6121
R16 2.2K (F)
R17 1.5K (F)
R18 12K
R50 220
C50 1/50
C12 0.01 (N)
TR8 2SA933 R.S
C16 0.01 (N)
R20 1/4W 1.3K
R19 9.1K
TR7 2SD2061 E, F
C18 47/10
C17 470P (K)
D10 1SS131
5.9V
TR2 2SD2061 E, F
C5 470P (K)
C6 47/16
TR3 2SA933S R.S
R5 39K
R6 1.6K
R7 1.8K
10.3V
9.7V
10.2V
C28 0.01 (N)
R3 3.3K (F)
R4 1.3K (F)
C27 100/25
L10 56
C26 1/50
P1
AC4V 12
AC4V 11
-35V 10
+37V 9
UNR 8
MOTOR13V 7
IDL9V 6
OPE9V 5
GND 4
IDL5V 3
OPE5V 2
GND 1
TO MAIN (A) PCB 3/3 WF201

POWER SUPPLY (2) PCB V1130B506B

WARNING: ⚠ AND ▇ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▇, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

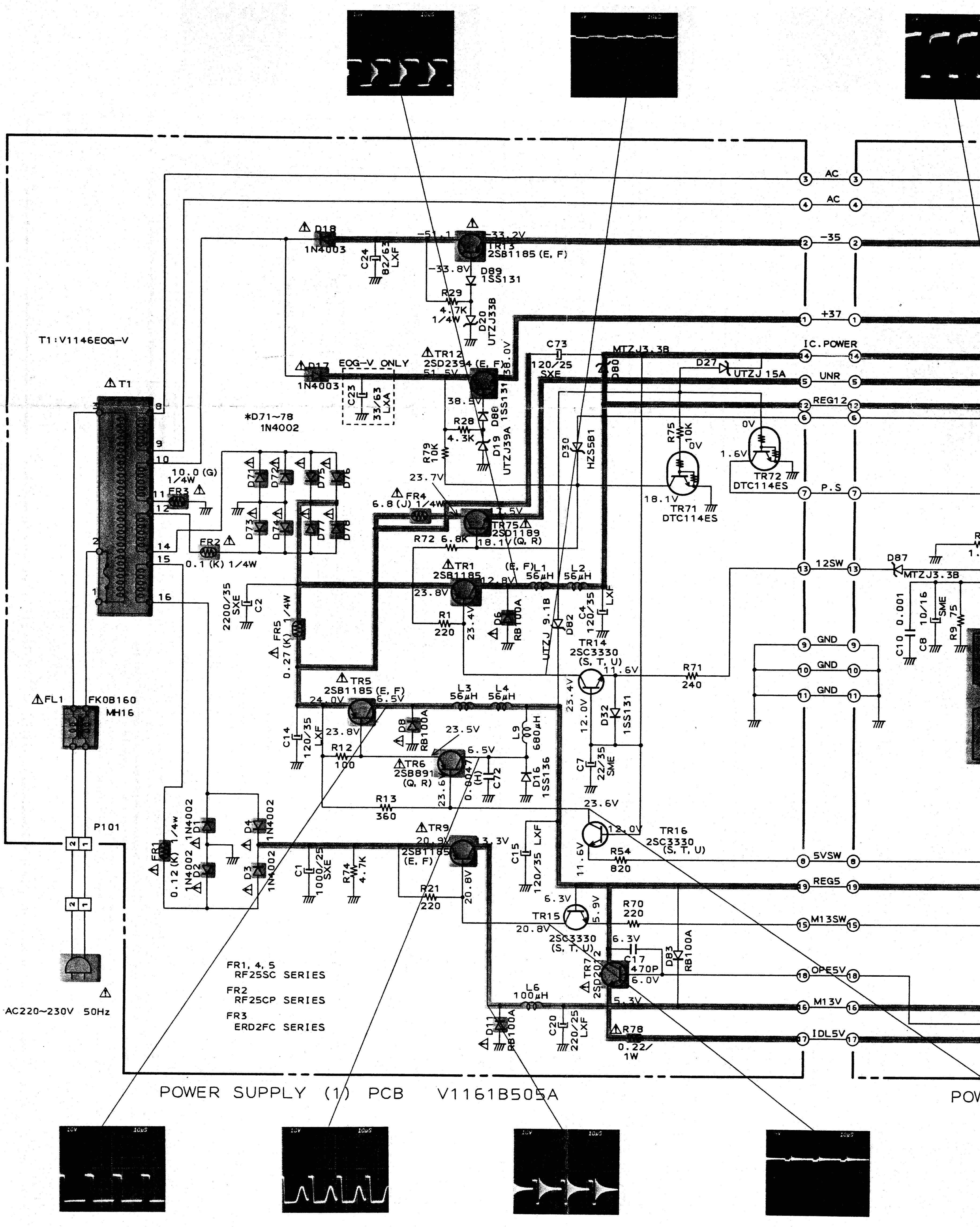
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN µF 50 WV (M)
ALL INDUCTORS IN µH (K)

▬ B (POWER SUPPLY LINE)

TAGES WERE MEASURED DURING E-E MODE.
OLTMETER'S NEGATIVE INPUT TO THE
MEASURED THE PRIMARY SECTION AND
WAS AC 220V.
RE TAKEN DURING E-E MODE.
IRST LINE FROM THE BOTTOM IS DC 0V.

## VS-G20EM
## POWER SUPPLY (1), (2) & DIODE SCHEMATIC DIAGRAM

No.19-3 V116403M
A1


T1:V1146EOG-V
⚠T1
⚠FL1
FK0B160
MH16
P101
AC220~230V 50Hz
⚠D18
1N4003
C24
82/63
LXF
⚠D17
1N4003
EOG-V ONLY
C23
33/63
LXA
*D71~78
1N4002
10.0 (G)
1/4W
FR3
FR2
0.1 (K) 1/4W
C2
2200/35
SXE
FR5
0.27 (K) 1/4W
⚠FR4
6.8 (J) 1/4W
⚠TR13
2SB1185 (E, F)
-51.1
-33.2V
-33.8V
D89
1SS131
R29
4.7K
1/4W
D20
UTZJ33B
⚠TR12
2SD2394 (E, F)
51.5V
38.0V
38.5V
R28
4.3K
D88
1SS131
D19
UTZJ39A
R79
10K
23.7V
C73
120/25
SXE
MTZJ3.3B
D80
D27
UTZJ 15A
R75
10K
0V
TR71
DTC114ES
18.1V
TR72
DTC114ES
1.6V
D30
HZS5B1
TR75⚠
2SD1189
(Q, R)
18.1V
R72 6.8K
⚠TR1
2SB1185
23.8V
12.8V
(E, F)L1
56µH
L2
56µH
C4
120/35
LXF
R1
220
23.4V
D6
RB100A
D82
UTZJ 9.1B
TR14
2SC3330
(S, T, U)
11.6V
R71
240
12.0V
D32
1SS131
⚠TR5
2SB1185 (E, F)
24.0V
6.5V
L3
56µH
L4
56µH
L9
680µH
C14
120/35
LXF
23.8V
D8
RB100A
R12
100
23.5V
6.5V
⚠TR6
2SB891
(Q, R)
23.6
0.0047 (H)
C72
D16
1SS136
C7
22/35
SME
R13
360
23.6V
12.0V
TR16
2SC3330
(S, T, U)
R54
820
11.6V
FR1
0.12 (K) 1/4w
1N4002
D1
D2
D3
D4
1N4002
C1
1000/25
SXE
R74
4.7K
⚠TR9
2SB1185
(E, F)
20.9V
13.3V
C15
120/35
LXF
R21
220
20.8V
6.3V
TR15
2SC3330
(S, T, U)
20.8V
5.9V
R70
220
6.3V
C17
470P
D83
RB100A
⚠TR7
2SD2012
6.0V
5.3V
L6
100µH
D11
RB100A
C20
220/25
LXF
⚠R78
0.22/
1W
FR1, 4, 5
RF25SC SERIES
FR2
RF25CP SERIES
FR3
ERD2FC SERIES
AC
-35
+37
IC.POWER
UNR
REG12
P.S
12SW
GND
5VSW
REG5
M13SW
OPE5V
M13V
IDL5V
D87
MTZJ3.3B
C10
0.001
C8
10/16
SME
R9
75
POW

POWER SUPPLY (1) PCB V1161B505A

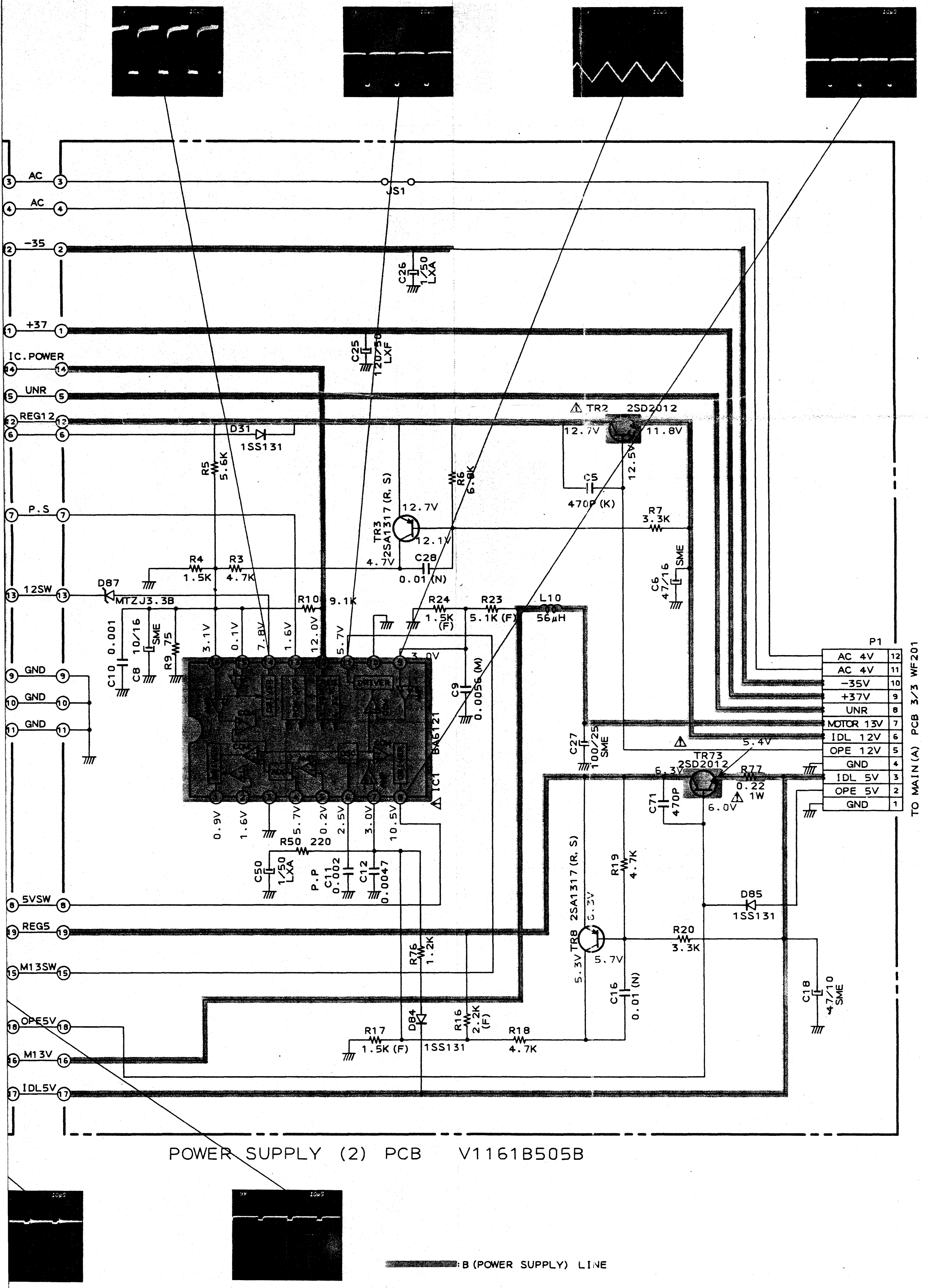
* INDICATED VOLTAGE WERE MEASURED DU
EE MODE.

* PHOTOGRAPHS WERE TAKEN DURING E-E
THE SCREEN'S FIRST LINE FROM THE
IS DC 0V.

WARNING: ⚠ AND ▇ INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER'S RECOMMENDED
PARTS

AVERTISSMENT: ⚠ ET ▇ ILS INDIQUENT LES
COMPOSTANTS CRITIQUES DE SÉCURITÉ,
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
DE L'APPAREIL, NE REMPLACER QUE DES
PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN µF 50 WV (M)

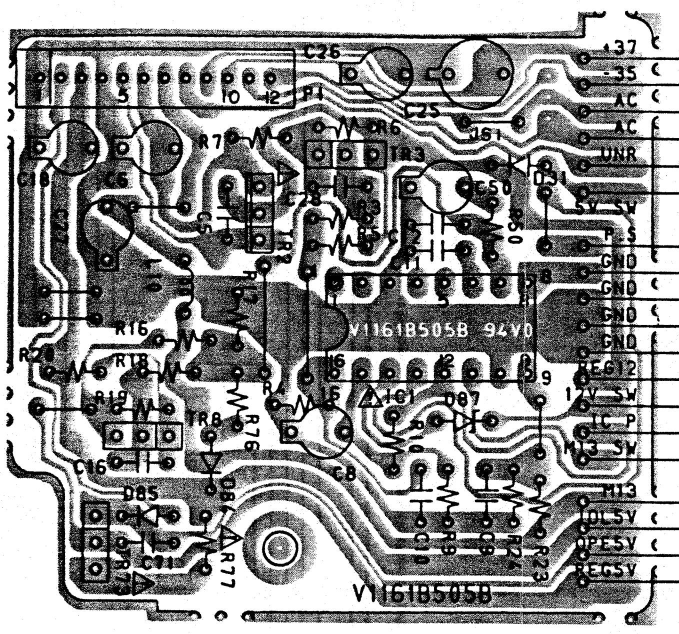

AC
AC
-35
+37
IC. POWER
UNR
REG12
P.S
12SW
GND
GND
GND
5VSW
REG5
M13SW
OPE5V
M13V
IDL5V
JS1
C26 1/50 LXA
C25 120/50 LXF
D31 1SS131
R5 5.6K
R6 6.8K
TR3 2SA1317 (R, S)
12.7V
12.1V
4.7V
C28 0.01 (N)
R4 1.5K
R3 4.7K
D87 MTZJ3.3B
R10 9.1K
R24 1.5K (F)
R23 5.1K (F)
L10 56μH
C10 0.001
C8 10/16 SME
R9 75
3.1V
0.1V
7.8V
1.6V
12.0V
5.7V
3.0V
C9 0.0056 (M)
BA6121
IC1
0.9V
1.6V
5.7V
0.2V
2.5V
3.0V
10.5V
R50 220
C50 1/50 LXA
P.P C11 0.002
C12 0.0047
R76 1.2K
D84 1SS131
R16 2.2K (F)
R17 1.5K (F)
R18 4.7K
TR2 2SD2012
12.7V
11.8V
12.5V
C5 470P (K)
R7 3.3K
C6 47/16 SME
C27 100/25 SME
TR73 2SD2012
6.3V
5.4V
R77 0.22 1W
6.0V
C71 470P
TR8 2SA1317 (R, S)
6.3V
5.7V
5.3V
R19 4.7K
C16 0.01 (N)
R20 3.3K
D85 1SS131
C18 47/10 SME
P1
AC 4V 12
AC 4V 11
-35V 10
+37V 9
UNR 8
MOTOR 13V 7
IDL 12V 6
OPE 12V 5
GND 4
IDL 5V 3
OPE 5V 2
GND 1
TO MAIN (A) PCB 3/3 WF201
POWER SUPPLY (2) PCB V1161B505B

▬ : B (POWER SUPPLY) LINE

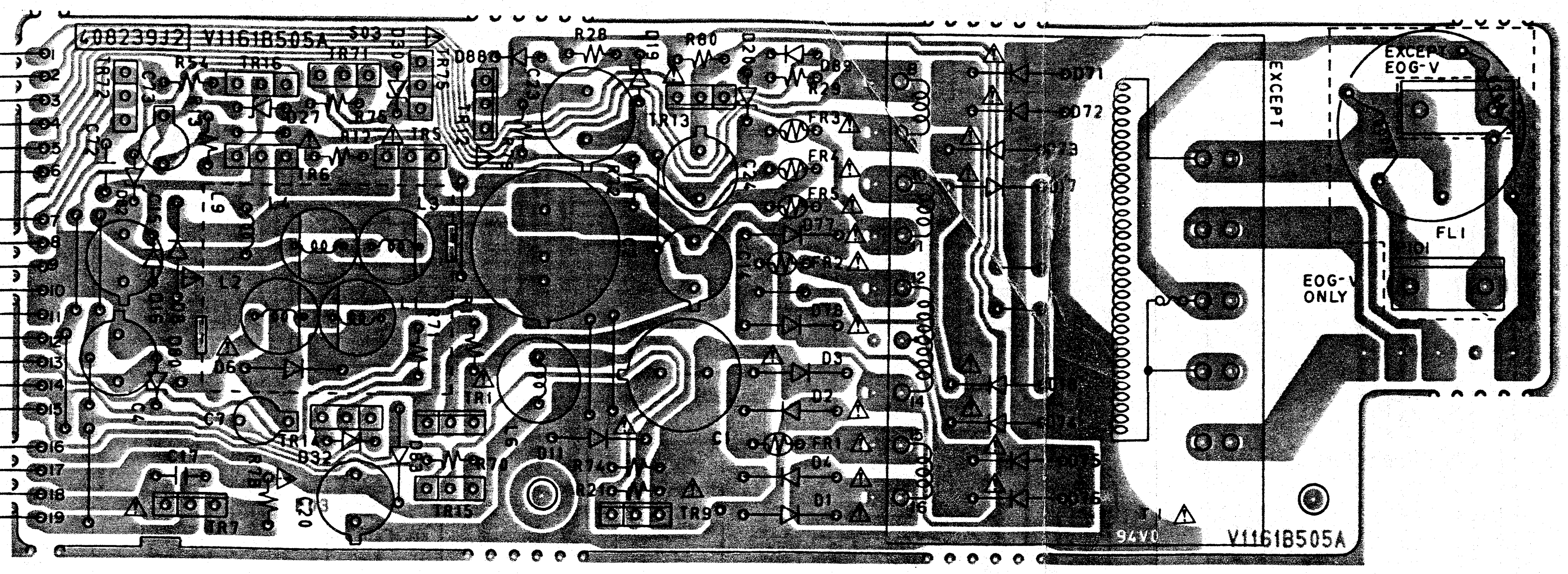
ED VOLTAGE WERE MEASURED DURING
.

APHS WERE TAKEN DURING E-E MODE.
EEN 'S FIRST LINE FROM THE BOTTOM
V.

VS-G25EOG-V
POWER SUPPLY (1), (2)
SCHEMATIC DIAGRAM
No.19-4 V116404M
A2


+37
-35
AC
AC
UNR
5V SW
P.S
GND
GND
GND
GND
REG12
12V SW
IC P
M13 SW
M13
DL5V
PE5V
REG5V
V1161B505B 94V0
V1161B505B
C26
C25
C16
C8
C50
R7
R16
R18
R19
R23
R24
R50
R76
R77
TR3
TR8
D31
D85
D87
JS1
IC1

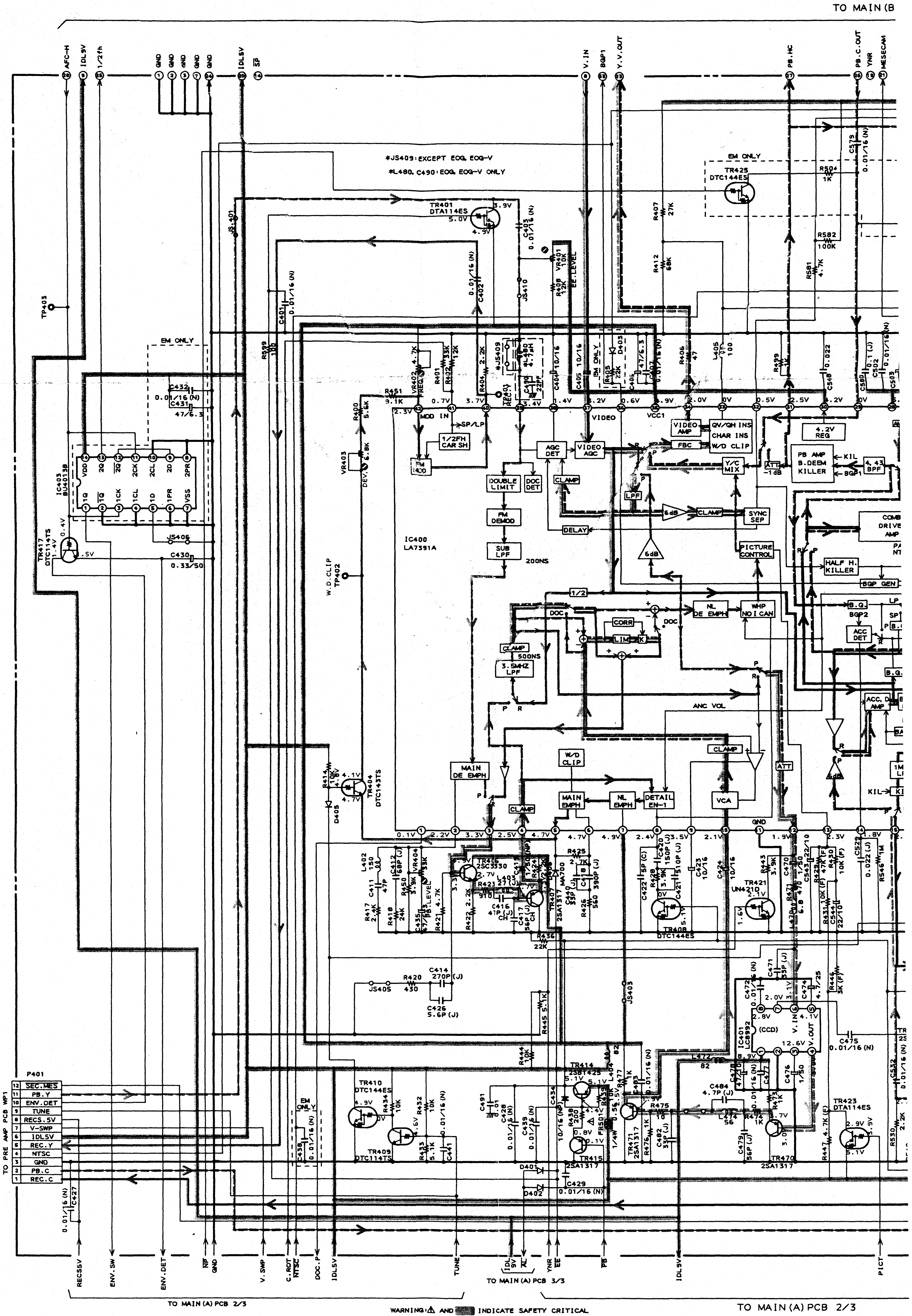
POWER SUPPLY(2)PCB V1161B505B(J3)


C0823912
V1161B505A
V1161B505A
94V0
EXCEPT
EXCEPT EOG-V
EOG-V ONLY
FL1
D71
D72
D73
D77
D880
D1
D2
D3
D4
D6
D32
D89
R28
R54
R80
TR1
TR5
TR6
TR7
TR9
TR12
TR13
TR15
TR16
TR71
FR1
FR3
FR4
FR5
C7
C17
L7
L9

POWER SUPPLY(1)PCB V1161B505A(J3)

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


TO MAIN (B
AFC-H
IDL9V
1/2fh
GND
IDL5V
SP
V.IN
BGP1
Y.V.OUT
PB.HC
PB.C.OUT
YNR
MESECAM
*JS409:EXCEPT EOG, EOG-V
*L480, C490:EOG, EOG-V ONLY
EM ONLY
TR401 DTA114ES
TR425 DTC144ES
TP403
IC403 BU4015B
TR417 DTC114TS
IC400 LA7391A
W.D.CLIP TP402
VR403 DEV.
VR402 REC.Y
VR401 EE.LEVEL
VIDEO AMP
VIDEO AGC
AGC DET
DOUBLE LIMIT
DOC DET
FM DEMOD
SUB LPF
CLAMP
DELAY
6dB
SYNC SEP
PICTURE CONTROL
Y/C MIX
LPF
FBC
QV/QH INS
CHAR INS
W/D CLIP
PB AMP
B.DEEM
KILLER
4.2V REG
HALF H. KILLER
BGP GEN
NL DE EMPH
WHP NOI CAN
CORR
LIM
3.5MHZ LPF
500NS
200NS
ANC VOL
MAIN DE EMPH
MAIN EMPH
NL EMPH
DETAIL EN-1
VCA
ATT
ACC DET
TR404 DTC143TS
TR416 2SC3330
TR407 2SA1317
TR408 DTC144ES
TR421 UN4210
IC401 LC8992 (CCD)
TR410 DTC144ES
TR409 DTC114TS
TR414 2SB1425
TR415 2SA1317
TR471 2SA1317
TR470 2SA1317
TR423 DTA114ES
P401
12 SEC.MES
11 PB.Y
10 ENV.DET
9 TUNE
8 RECS.5V
7 V-SWP
6 IDL5V
5 REC.Y
4 NTSC
3 GND
2 PB.C
1 REC.C
TO PRE AMP PCB WP1
RECS5V
ENV.SW
ENV.DET
NF
GND
V.SWP
C.ROT
NTSC
DOC.P
IDL5V
TUNE
IDL 9V
AL
YNR
EE
PB
IDL9V
PICT
TO MAIN (A) PCB 3/3

TO MAIN (A) PCB 2/3

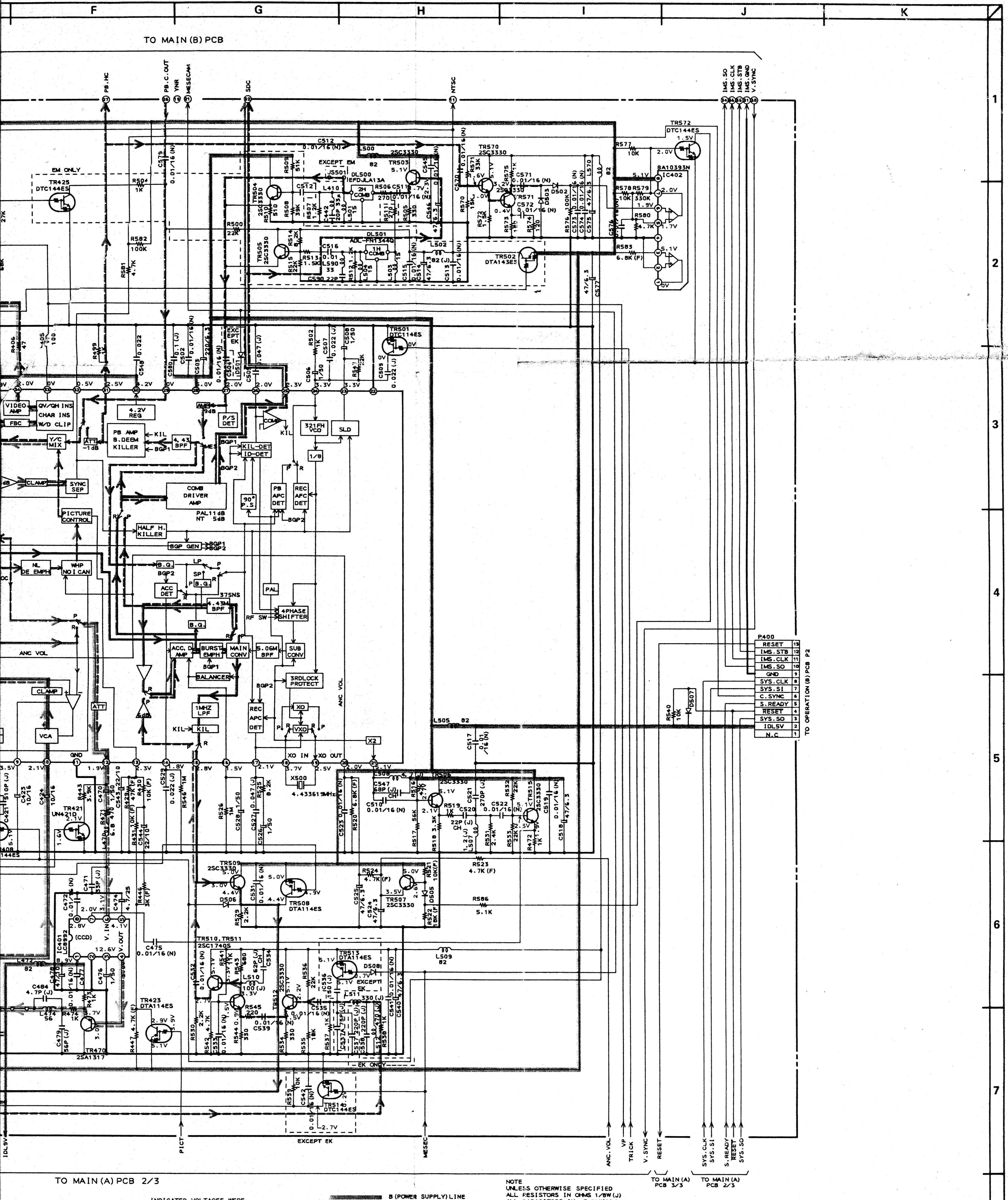
TO MAIN (A) PCB 2/3

MAIN(A) PCB 1/3 V1130A501A

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLT
MEASURED DURIN


F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO MAIN (B) PCB
PB.HC
PB.C.OUT
YNR
MESECAM
SDC
NTSC
IMS.SO
IMS.CLK
IMS.STB
IMS.GND
V.SYNC
EM ONLY
TR425 DTC144ES
EXCEPT EM
TR503
TR504 2SC3330
TR505 2SC3330
DL500 IEFDJLA13A
DL501 ADC-FN1344Q
2H COMB
1H COMB
TR570 2SC3330
TR571
TR572 DTC144ES
TR502 DTA143ES
BA10393N IC402
VIDEO AMP
QV/QH INS
CHAR INS
W/D CLIP
FBC
Y/C MIX
ATT -1dB
4.2V REG
PB AMP
B.DEEM
KILLER
4.43 BPF
AMP 9dB
P/S DET
COMP
KIL-DET
ID-DET
321FH VCO
SLD
1/8
CLAMP
SYNC SEP
COMB DRIVER AMP
PAL11dB NT 5dB
90° P.S
PB APC DET
REC AFC DET
PICTURE CONTROL
HALF H. KILLER
BGP GEN
BGP1
BGP2
NL DE EMPH
WHP NOI CAN
B.G.
ACC DET
375NS
4.43M BPF
PAL
4PHASE SHIFTER
RF SW
ANC VOL
ACC AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RDLOCK PROTECT
1MHZ LPF
KIL
REC APC DET
XO
VXO
X2
XO IN
XO OUT
X500 4.433619MHz
ATT
VCA
GND
TR421 UN421D
TR501 DTC114ES
TR506 2SC3330
TR515 2SC3330
TR509 2SC3330
TR508 DTA114ES
TR507 2SC3330
TR510, TR511 2SC1740S
TR513 DTA114ES
TR512 2SC3330
TR514 DTC144ES
EXCEPT EK
EK ONLY
IC401 LC8992 (CCD)
TR423 DTA114ES
TR470 2SA1317
P400
RESET
IMS.STB
IMS.CLK
IMS.SO
GND
SYS.CLK
SYS.SI
C.SYNC
S.READY
RESET
SYS.SO
IDL5V
N.C
TO OPERATION (B) PCB P2
IDL9V
PICT
MESEC
ANC.VOL
VP
TRICK
V.SYNC
RESET
SYS.CLK
SYS.SI
S.READY
RESET
SYS.SO
TO MAIN (A) PCB 3/3
TO MAIN (A) PCB 2/3
TO MAIN (A) PCB 2/3

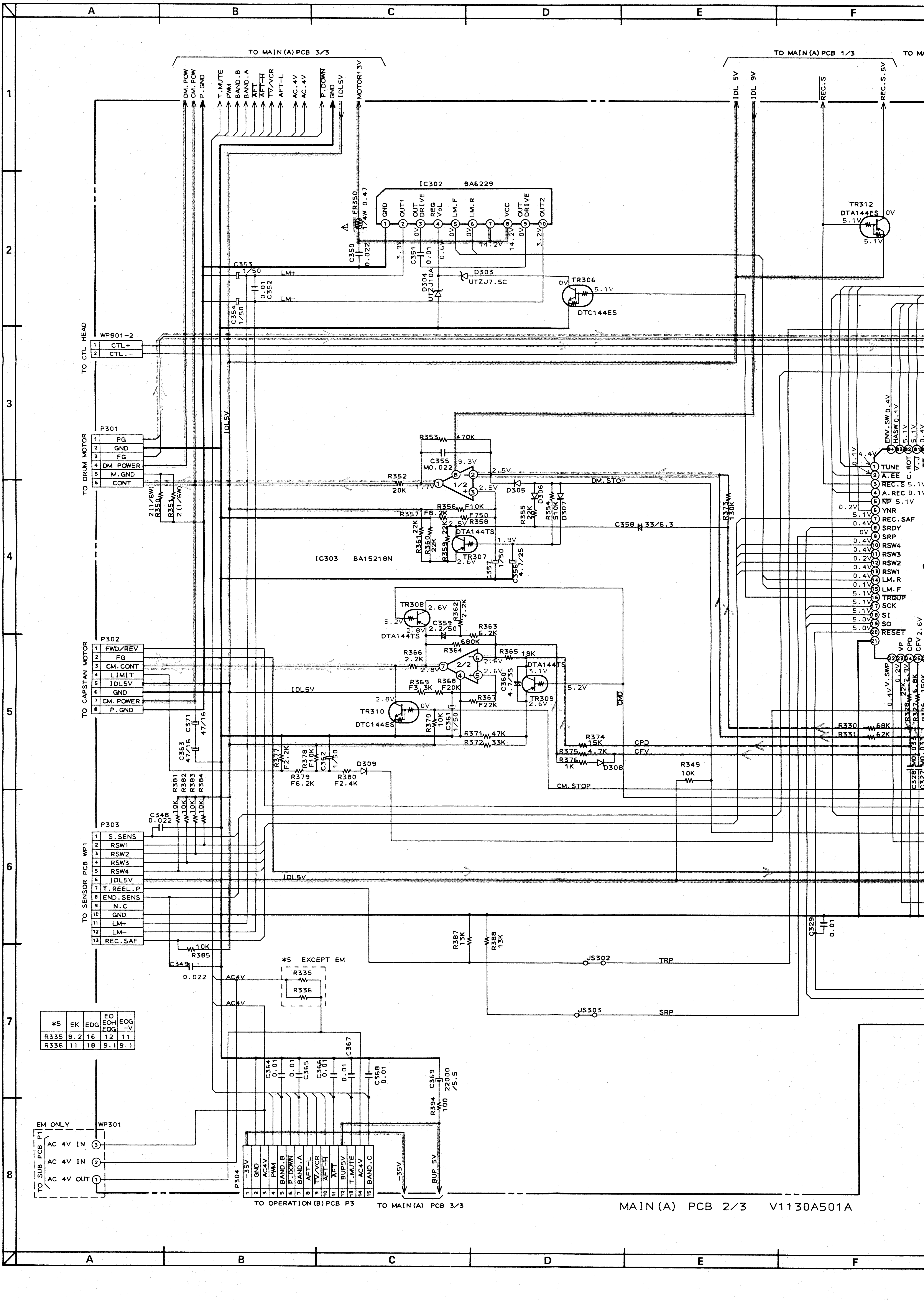
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

| | |
|---|---|
| ▬ | B (POWER SUPPLY) LINE |
| ‐ ‐ ‐ | PB Y SIGNAL LINE |
| ━ | REC Y SIGNAL LINE |
| ‐ ‐ ‐ | PB CHROMA SIGNAL LINE |
| ━ | REC CHROMA SIGNAL LINE |

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN µF 50WV (M)
ALL INDUCTORS IN µH (K)
ALL DIODES ARE 1SS131T

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
MAIN (A) 1/3 (VIDEO BLK)
SCHEMATIC DIAGRAM

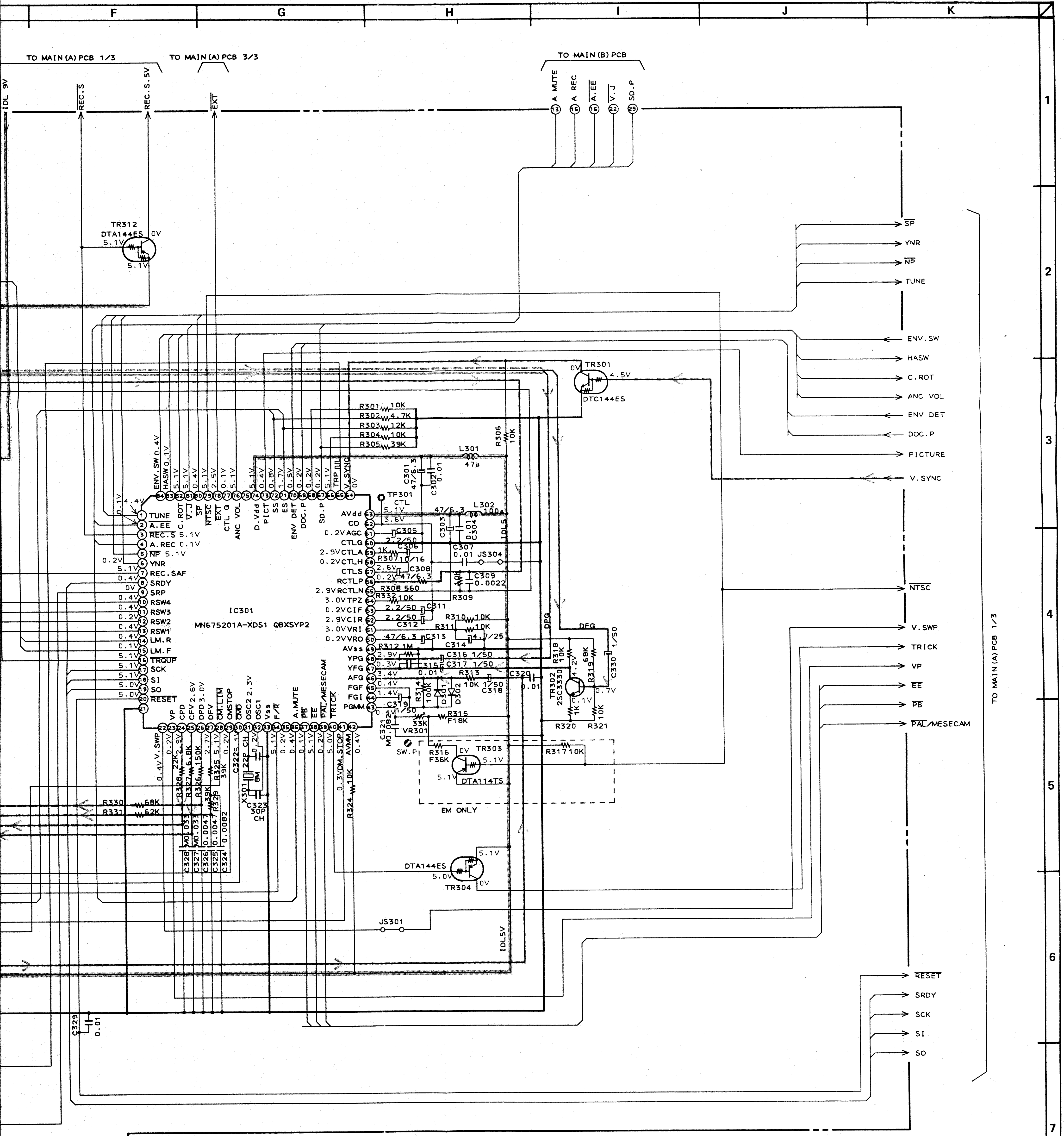
No.19-5 V116405M
A0



TO MAIN (A) PCB 3/3
DM.POW
CM.POW
P.GND
T.MUTE
PWM
BAND.B
BAND.A
AFT
AFT-H
TV/VCR
AFT-L
AC.4V
AC.4V
P.DOWN
GND
IDL5V
MOTOR13V
TO MAIN (A) PCB 1/3
IDL 5V
IDL 9V
REC.S
REC.S.5V
IC302 BA6229
GND
OUT1
OUT DRIVE
REG VoL
LM.F
LM.R
VCC
OUT DRIVE
OUT2
FR350 1/4W 0.47
C350 0.022
C351 0.01
C353 1/50
C352 0.01
C354 1/50
LM+
LM−
D303 UTZJ7.5C
D304 UTZJ10A
TR306 DTC144ES
TR312 DTA144ES
TO CTL HEAD
WP801-2
CTL+
CTL.−
TO DRUM MOTOR
P301
PG
GND
FG
DM POWER
M.GND
CONT
IDL5V
R350 2(1/6W)
R351 2(1/6W)
R353 470K
C355 M0.022
R352 20K
1/2
D305
D306
D307
DM.STOP
R355 22K
R354 510K
R356 F10K
R357 F8.2K
F750
R358
R361 22K
R360 22K
R359 22K
DTA144TS
TR307
C357 1/50
C356 4.7/25
R373 130K
C358 33/6.3
IC303 BA15218N
TR308
R362 2.2K
C359 2.2/50
DTA144TS
R363 6.2K
R364 680K
R365 18K
R366 2.2K
2/2
C360 4.7/35
DTA144TS
TR309
R369 F3.3K
R368 F20K
R367 F22K
TR310
DTC144ES
R370 10K
C361 1/50
R371 47K
R372 33K
CMD
R374 15K
R375 4.7K
R376 1K
D308
CPD
CFV
R349 10K
CM.STOP
TO CAPSTAN MOTOR
P302
FWD/REV
FG
CM.CONT
LIMIT
IDL5V
GND
CM.POWER
P.GND
C371 47/16
C363 47/16
R377 F2.2K
R378 F10K
C362 1/50
R379 F6.2K
R380 F2.4K
D309
R381 10K
R382 10K
R383 10K
R384 10K
C348 0.022
TO SENSOR PCB WP1
P303
S.SENS
RSW1
RSW2
RSW3
RSW4
IDL5V
T.REEL.P
END.SENS
N.C
GND
LM+
LM−
REC.SAF
R385 10K
C349 0.022
AC4V
*5 EXCEPT EM
R335
R336
R387 13K
R388 13K
JS302
TRP
JS303
SRP
C329 0.01
R330 68K
R331 62K
C364 0.01
C365 0.01
C366 0.01
C367 0.01
C368 0.01
C369 22000/5.5
R394 100
EM ONLY
TO SUB PCB P1
AC 4V IN
AC 4V IN
AC 4V OUT
WP301
P304
−35V
GND
AC4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP5V
T.MUTE
AC4V
BAND.C
TO OPERATION (B) PCB P3
−35V
BUP 5V
TO MAIN (A) PCB 3/3
ENV.SW
HASW
TUNE
A.EE
REC.S
A.REC
NP
YNR
REC.SAF
SRDY
SRP
RSW4
RSW3
RSW2
RSW1
LM.R
LM.F
TRQUP
SCK
SI
SO
RESET
V.SWP
VP
CPD
CFV
A
B
C
D
E
F
1
2
3
4
5
6
7
8

| *5 | EK | EDG | EO EOH EOG | EOG −V |
|---|---|---|---|---|
| R335 | 8.2 | 16 | 12 | 11 |
| R336 | 11 | 18 | 9.1 | 9.1 |

MAIN (A) PCB 2/3 V1130A501A


F
G
H
I
J
K
1
2
3
4
5
6
7
TO MAIN (A) PCB 1/3
TO MAIN (A) PCB 3/3
TO MAIN (B) PCB
IDL 9V
REC.S
REC.S.5V
EXT
A.MUTE
A.REC
A.EE
V.J
SD.P
13
15
16
22
29
TR312
DTA144ES
5.1V
0V
SP
YNR
NP
TUNE
ENV.SW
HASW
C.ROT
ANC VOL
ENV DET
DOC.P
PICTURE
V.SYNC
NTSC
V.SWP
TRICK
VP
EE
PB
PAL/MESECAM
RESET
SRDY
SCK
SI
SO
TO MAIN (A) PCB 1/3
TR301
DTC144ES
4.5V
R301 10K
R302 4.7K
R303 12K
R304 10K
R305 39K
R306 10K
L301 47μ
C301 47/6.3
C302 0.01
TP301 CTL
L302 100μ
C303 47/6.3
C304 0.01
IDL5
C305 2.2/50
C306
R307 10/16
C307 0.01
JS304
C308 47/6.3
C309 0.0022
R308 560
R309
R332 10K
C311 2.2/50
C312 2.2/50
R310 10K
R311 10K
C313 47/6.3
4.7/25
C314
R312 1M
C315
C316 1/50
C317 1/50
R313 10K
C318 1/50
C320 0.01
R314 100K
D301
D302
C319
R315 F18K
33K
VR301
C321 M0.082
SW.P
R316 F36K
TR303
DTA114TS
R317 10K
EM ONLY
DFG
DPG
R318 10K
R319 68K
C330 1/50
TR302 2SC3330
R320 1K
R321 10K
IC301
MN675201A-XDS1 QBXSYP2
TUNE
A.EE
REC.S
A.REC
NP
YNR
REC.SAF
SRDY
SRP
RSW4
RSW3
RSW2
RSW1
LM.R
LM.F
TRQUP
SCK
SI
SO
RESET
ENV.SW
HASW
C.ROT
V.J
SP
NTSC
EXT G
CTL G
ANC VOL
D.Vdd
PICT
SS
ES
ENV DET
DOC.P
SD.P
TRP
V.SYNC
AVdd
CO
AGC
CTLG
CTLA
CTLH
CTLS
RCTLP
RCTLN
TPZ
CIF
CIR
VRI
VRO
AVss
YPG
YFG
AFG
FGF
FGI
PGMM
V.SWP
VP
CPD
CFV
DPD
DFV
CM.LIM
CMSTOP
CMO
OSC2
OSC1
Vss
F/R
A.MUTE
PB
EE
PAL/MESECAM
TRICK
VM.STOP
AVMM
R328 22K
R327 6.8K
R326 150K
R325 39K
R329 39K
C322 5.1V
22P CH
X301 8M
C323 30P CH
C328 M0.033
C327 M0.033
C326 0.0047
C325 0.0047
C324 0.0082
R324 10K
R330 68K
R331 62K
TR304
DTA144ES
5.1V
5.0V
0V
JS301
IDL5V
C329 0.01

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W
ALL CAPACITORS IN μF (P=PF) 50WV
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

| | |
|---|---|
| ▬▬▬ | B (POWER SUPPLY) LINE |
| ▬▬▬ | CAPSTAN MOTOR SPEED CONTROL LINE |
| ‒ ‒ ‒ | CAPSTAN MOTOR PHASE CONTROL LINE |
| ▬▬▬ | DRUM MOTOR SPEED CONTROL LINE |
| ‒ ‒ ‒ | DRUM MOTOR PHASE CONTROL LINE |

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

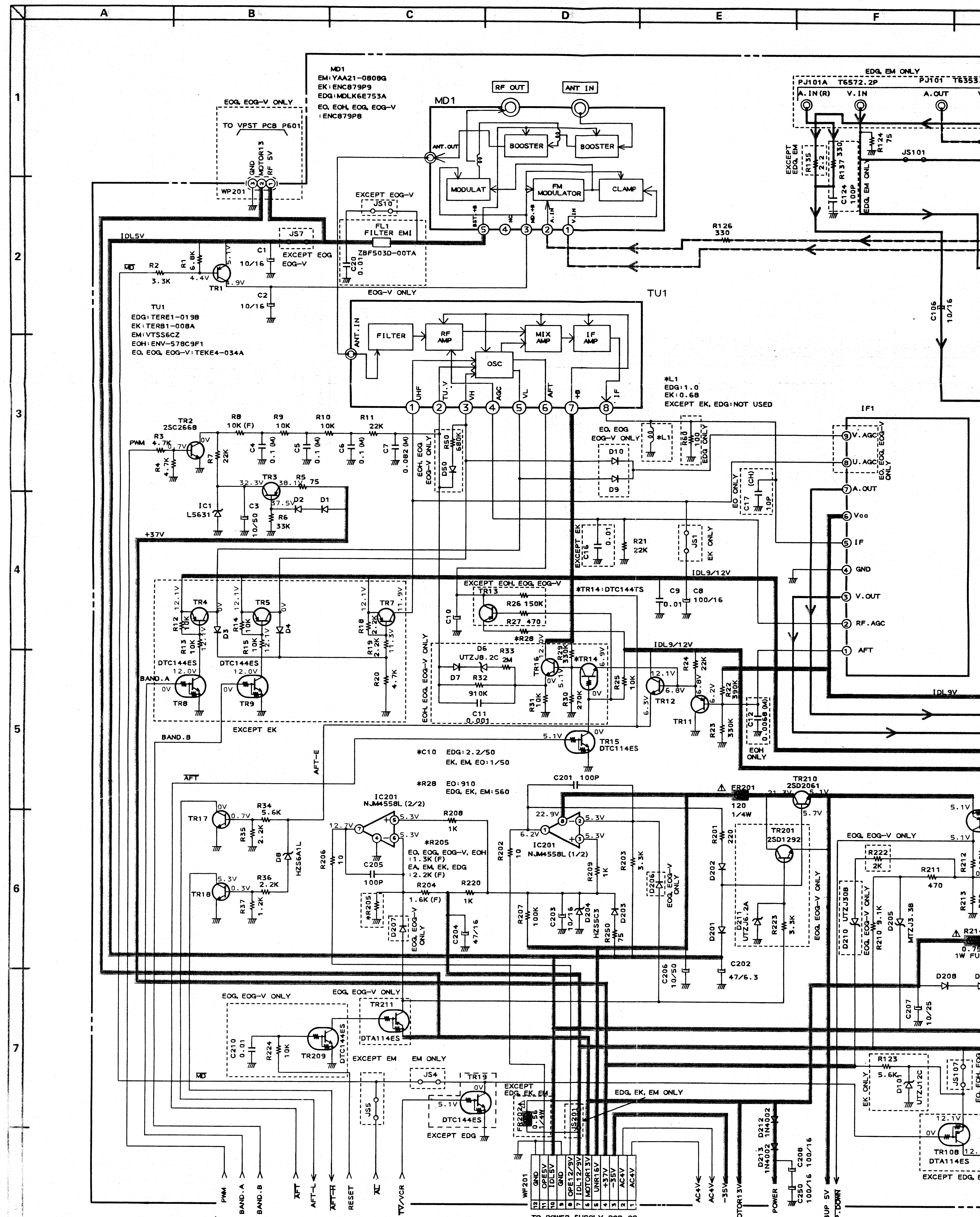
AVERTISSMENT: ⚠ ET ▨ , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

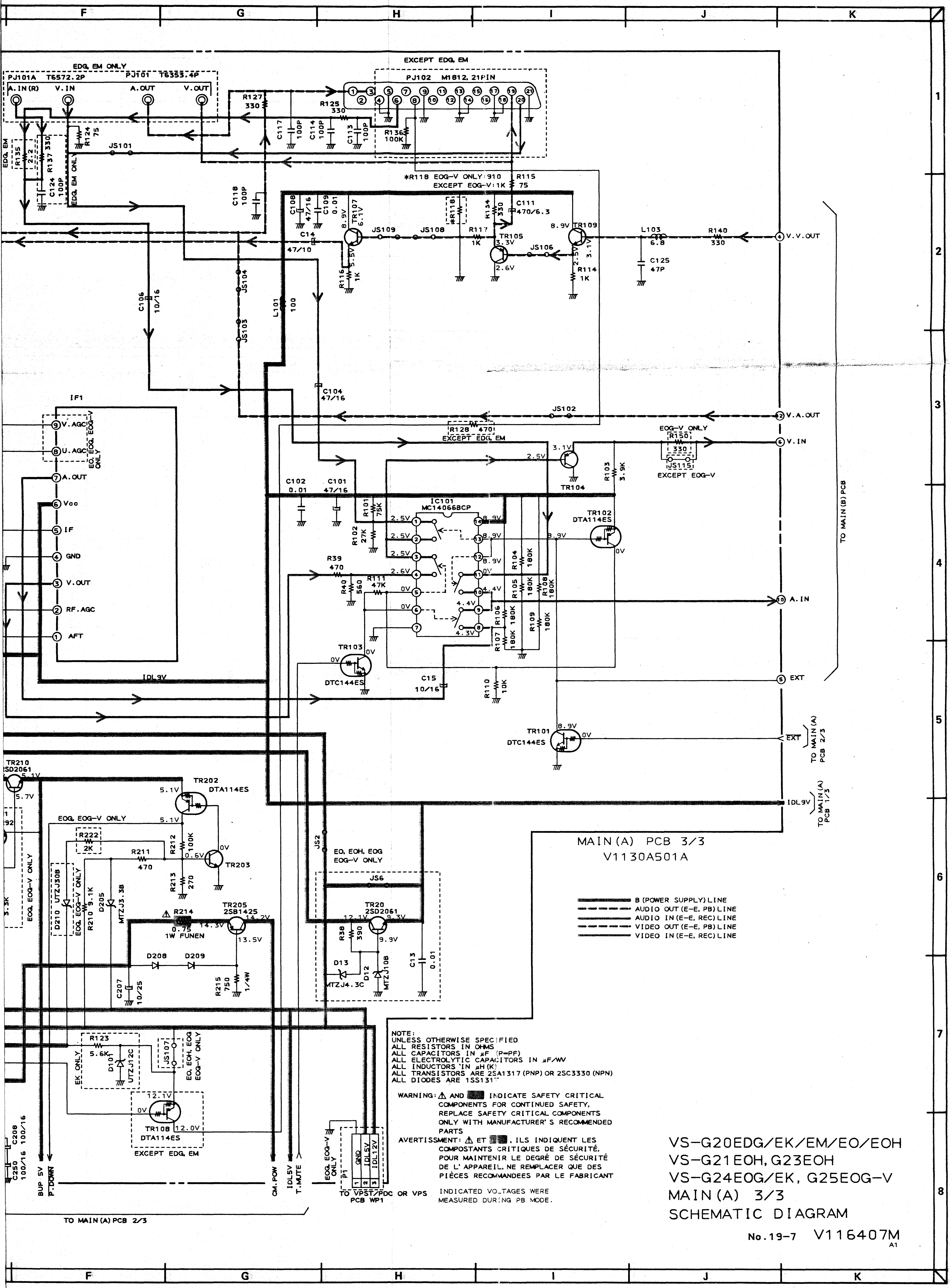
3 V1130A501A

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
MAIN (A) 2/3 (SERVO, SYSCON)
SCHEMATIC DIAGRAM

No.19-6 V116406M
A1

F G H I J K 8


A
B
C
D
E
F
1
2
3
4
5
6
7
MD1
EM:YAA21-0808G
EK:ENC879P9
EDG:MDLK6E753A
EO, EOH, EOG, EOG-V
:ENC879P8
RF OUT
ANT IN
ANT.OUT
BOOSTER
BOOSTER
MODULAT
FM MODULATOR
CLAMP
BST.+B
NC
MD.+B
A.IN
V.IN
EOG, EOG-V ONLY
TO VPST PCB P601
GND
MOTOR13
RF 5V
WP201
EXCEPT EOG-V
JS10
FL1
FILTER EMI
ZBF503D-00TA
C20
0.01
EOG-V ONLY
JS7
EXCEPT EOG
EOG-V
IDL5V
MD
R2
3.3K
R1
6.8K
5.1V
4.4V
4.9V
TR1
C1
10/16
C2
10/16
TU1
EDG:TERE1-019B
EK:TERB1-008A
EM:VTSS6CZ
EOH:ENV-578C9F1
EO, EOG, EOG-V:TEKE4-034A
TU1
ANT.IN
FILTER
RF AMP
MIX AMP
IF AMP
OSC
UHF
TU.V
VH
AGC
VL
AFT
+B
IF
*L1
EDG:1.0
EK:0.68
EXCEPT EK, EDG:NOT USED
EDG, EM ONLY
PJ101A
T6572.2P
PJ101
A.IN(R)
V.IN
A.OUT
EXCEPT EDG, EM
R135
2.2
R137
330
C124
100P
EDG, EM ONLY
R124
75
JS101
R126
330
C106
10/16
IF1
V.AGC
U.AGC
EO, EOG, EOG-V ONLY
A.OUT
Vcc
IF
GND
V.OUT
RF.AGC
AFT
TR2
2SC2668
PWM
R3
4.7K
R4
4.7K
R7
22K
R8
10K (F)
R9
10K
R10
10K
R11
22K
C4
0.1 (M)
C5
0.1 (M)
C6
0.1 (M)
C7
0.062 (M)
EOH, EOG
EOG-V ONLY
R50
680K
D50
EO, EOG
EOG-V ONLY
D10
D9
*L1
R60
10
EDG ONLY
EO ONLY
C17
10P
(CH)
TR3
32.3V
38.1V
37.5V
R5
75
D2
D1
R6
33K
IC1
L5631
C3
10/50
+37V
EXCEPT EK
C16
0.01
R21
22K
JS1
EK ONLY
IDL9/12V
C9
0.01
C8
100/16
EXCEPT EOH, EOG, EOG-V
TR13
R26 150K
R27 470
*TR14:DTC144TS
*R28
C10
TR4
TR5
TR7
R12
R13
R14
R15
R18
R19
R20
4.7K
D3
D4
12.1V
0V
11.9V
11.3V
DTC144ES
DTC144ES
BAND.A
12.0V
TR8
TR9
EXCEPT EK
BAND.B
EOH, EOG, EOG-V ONLY
D6
UTZJ8.2C
R33
2M
D7
R32
910K
C11
0.001
TR16
R29
330K
*TR14
R31
10K
R30
270K
R25
10K
IDL9/12V
TR12
12.1V
6.8V
6.2V
R24
22K
R22
390K
R23
330K
C12
0.0068 (M)
EOH ONLY
TR11
5.1V
TR15
DTC114ES
*C10 EDG:2.2/50
EK, EM, EO:1/50
*R28 EO:910
EDG, EK, EM:560
AFT-E
AFT
TR17
R34
5.6K
R35
2.2K
D8
HZS6A1L
TR18
R36
2.2K
R37
1.2K
IC201
NJM4558L (2/2)
R208
1K
*R205
EO, EOG, EOG-V, EOH
:1.3K (F)
EA, EM, EK, EDG
:2.2K (F)
R206
10
C205
100P
R204
1.6K (F)
R220
1K
*R205
D207
EOG, EOG-V ONLY
C204
47/16
C201 100P
IC201
NJM4558L (1/2)
22.9V
6.2V
5.3V
R202
10
R203
3.3K
R209
1K
D206
EOG, EOG-V ONLY
R207
100K
C203
10/16
D204
HZS5C3
R250
75
D203
C206
10/50
FR201
120
1/4W
TR210
2SD2061
21.3V
5.1V
5.7V
R201
220
D202
TR201
2SD1292
D201
D211
UTZJ6.2A
R223
3.3K
EOG, EOG-V ONLY
C202
47/6.3
EOG, EOG-V ONLY
R222
2K
R211
470
R212
R213
D210
UTZJ30B
R210
9.1K
D205
MTZJ3.3B
R214
0.75
1W FU
D208
C207
10/25
EOG, EOG-V ONLY
C210
0.01
R224
10K
TR209
DTC114ES
EOG, EOG-V ONLY
TR211
DTA114ES
EXCEPT EM
EM ONLY
JS4
JS5
TR19
DTC144ES
EXCEPT EDG
EXCEPT EDG, EK, EM
FR202
0.56
1/4W
JS201
EDG, EK, EM ONLY
D212
1N4002
D213
1N4002
C208
100/16
C250
100/16
R123
5.6K
EK ONLY
D101
UTZJ12C
JS107
EO, EOH, EOG
TR108
DTA114ES
EXCEPT EDG, E
12.1V
WF201
GND
OPE5V
IDL5V
GND
OPE12/9V
IDL12/9V
MOTOR13V
UNR16V
+37V
-35V
AC4V
AC4V
TO POWER SUPPLY PCB OR
POWER SUPPLY (2) PCB P1
PWM
BAND.A
BAND.B
AFT
AFT-L
AFT-H
RESET
AL
TV/VCR
TO MAIN (A) PCB 2/3
TO MAIN (A) PCB 1/3
TO MAIN (A) PCB 2/3
AC4V
AC4V
-35V
MOTOR13V
DM POWER
BUP 5V
P.DOWN
TO MAIN (A) PCB 2/3


F
G
H
I
J
K
1
2
3
4
5
6
7
8
EDG, EM ONLY
PJ101A T6572.2P
PJ101 T6353.4P
A.IN(R)
V.IN
A.OUT
V.OUT
EXCEPT EDG, EM
PJ102 M1812, 21PIN
R127 330
R125 330
C117 100P
C114 100P
C113 100P
R136 100K
R124 75
JS101
R135 2.2
R137 330
C124 100P
EDG, EM ONLY
C118 100P
*R118 EOG-V ONLY: 910
EXCEPT EOG-V: 1K
R115 75
C108 47/16
C109 0.01
TR107
R134 330
C111 470/6.3
8.9V
6.1V
5.5V
5.5V
JS109
JS108
R117 1K
TR105
3.3V
2.6V
JS106
8.9V
TR109
2.5V
3.1V
R114 1K
L103 6.8
R140 330
C125 47P
④ V.V.OUT
C14 47/10
R116 1K
C106 10/16
JS104
JS103
L101 100
C104 47/16
JS102
R128 470
EXCEPT EDG, EM
⑫ V.A.OUT
EOG-V ONLY
R150 330
JS115
EXCEPT EOG-V
⑥ V.IN
TO MAIN(B)PCB
IF1
⑨ V.AGC
⑧ U.AGC
EO, EOG, EOG-V ONLY
⑦ A.OUT
⑥ Vcc
⑤ IF
④ GND
③ V.OUT
② RF.AGC
① AFT
3.1V
2.5V
TR104
R103 3.9K
C102 0.01
C101 47/16
IC101 MC14066BCP
R101 75K
R102 27K
2.5V
2.5V
2.5V
2.6V
0V
0V
8.9V
8.9V
8.9V
0V
4.4V
4.4V
4.3V
TR102 DTA114ES
8.9V
0V
R104 180K
R105 180K
R108 180K
R106 180K
R109 180K
R107 180K
R39 470
R40 560
R111 47K
⑩ A.IN
TR103
0V
0V
DTC144ES
C15 10/16
R110 10K
⑤ EXT
TR101
8.9V
0V
DTC144ES
EXT
TO MAIN(A) PCB 2/3
IDL9V
IDL9V
TO MAIN(A) PCB 1/3
TR210
2SD2061
5.1V
5.7V
TR202 DTA114ES
5.1V
5.1V
EOG, EOG-V ONLY
R222 2K
R211 470
R212 100K
0.6V
0V
TR203
R213 270
D210 UTZJ30B
EOG, EOG-V ONLY
R210 9.1K
D205 MTZJ3.3B
EOG, EOG-V ONLY
3.3K
R214 0.75 1W FUNEN
TR205 2SB1425
14.3V
14.2V
13.5V
D208
D209
C207 10/25
R215 750 1/4W
JS2
EO, EOH, EOG
EOG-V ONLY
JS6
TR20 2SD2061
12.1V
9.3V
9.9V
R38 390
D13 MTZJ4.3C
D12 MTZJ10B
C13 0.01
R123 5.6K
EK ONLY
D10 UTZJ12C
JS107
EO, EOH, EOG
EOG-V ONLY
12.1V
0V
TR108 DTA114ES
12.0V
EXCEPT EDG, EM
C208 100/16
C250 100/16
BUP 5V
P.DOWN
CM.POW
IDL5V
T.MUTE
EOG, EOG-V ONLY
P1
GND
IDL5V
IDL12V
TO VPST/PDC OR VPS PCB WP1
TO MAIN(A)PCB 2/3

MAIN(A) PCB 3/3
V1130A501A

B (POWER SUPPLY) LINE
AUDIO OUT (E-E, PB) LINE
AUDIO IN (E-E, REC) LINE
VIDEO OUT (E-E, PB) LINE
VIDEO IN (E-E, REC) LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)
ALL TRANSISTORS ARE 2SA1317 (PNP) OR 2SC3330 (NPN)
ALL DIODES ARE 1SS131

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK, G25EOG-V
MAIN(A) 3/3
SCHEMATIC DIAGRAM

No.19-7 V116407M A1

## PRINCIPAL PARTS LOCATION

### ICs

| | |
|---|---|
| IC101 | D5 |
| IC201 | F4,5 |
| IC301 | E1,2 |
| IC302 | F1,2 |
| IC303 | E,F3 |
| IC400 | C3 |
| IC401 | C,D4 |
| IC402 | C,D1 |
| IC403 | C5 |

### WF & WPs

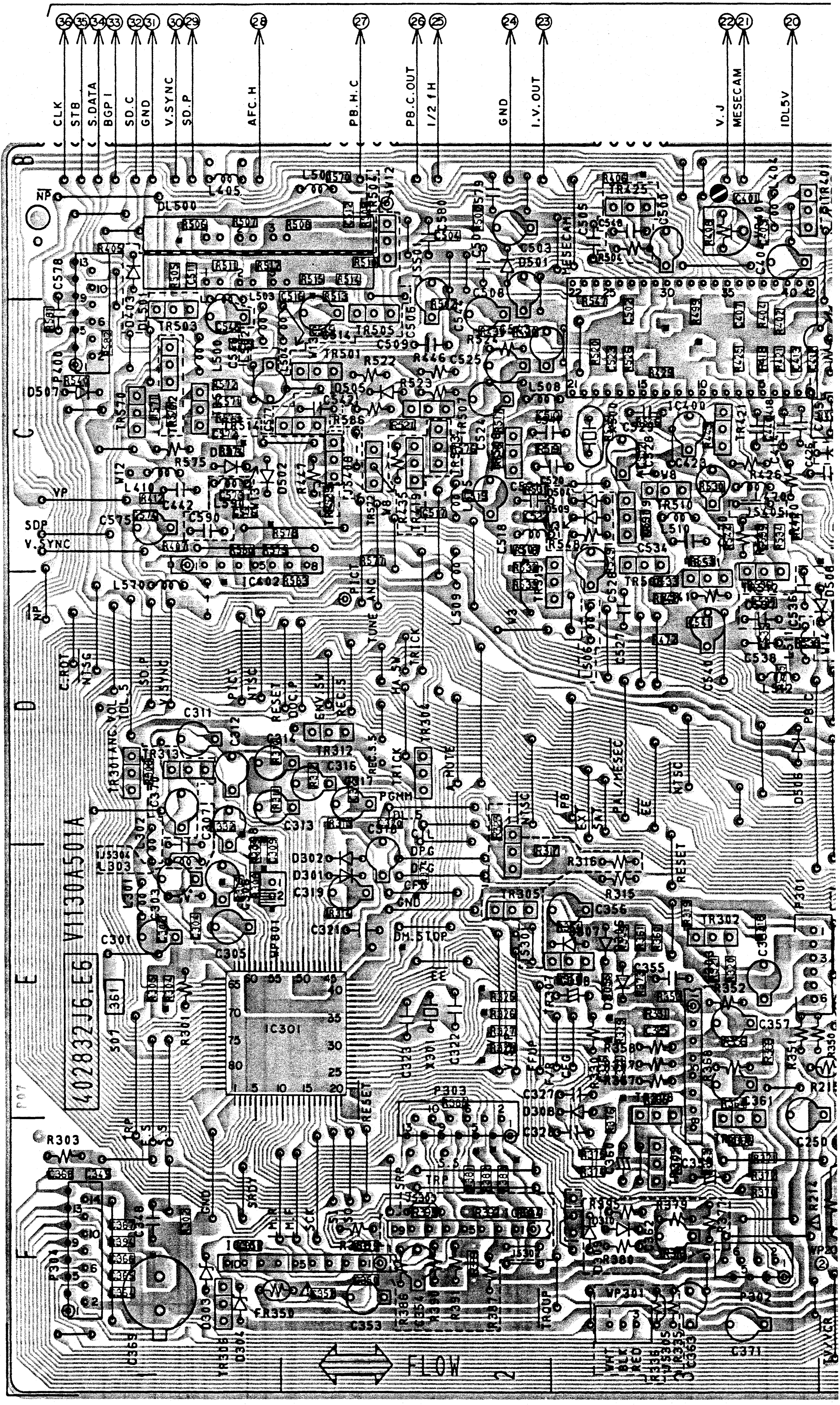
| | |
|---|---|
| WF201 | F4,5 |
| WP301 | F3 |
| WP801 | E1,2 |

### CONNECTORs

| | |
|---|---|
| P1 | E,F5 |
| P250 | F4 |
| P301 | E3 |
| P302 | F4 |
| P303 | E2 |
| P304 | F1 |
| P400 | B,C1 |
| P401 | D5 |

### TRANSISTORs

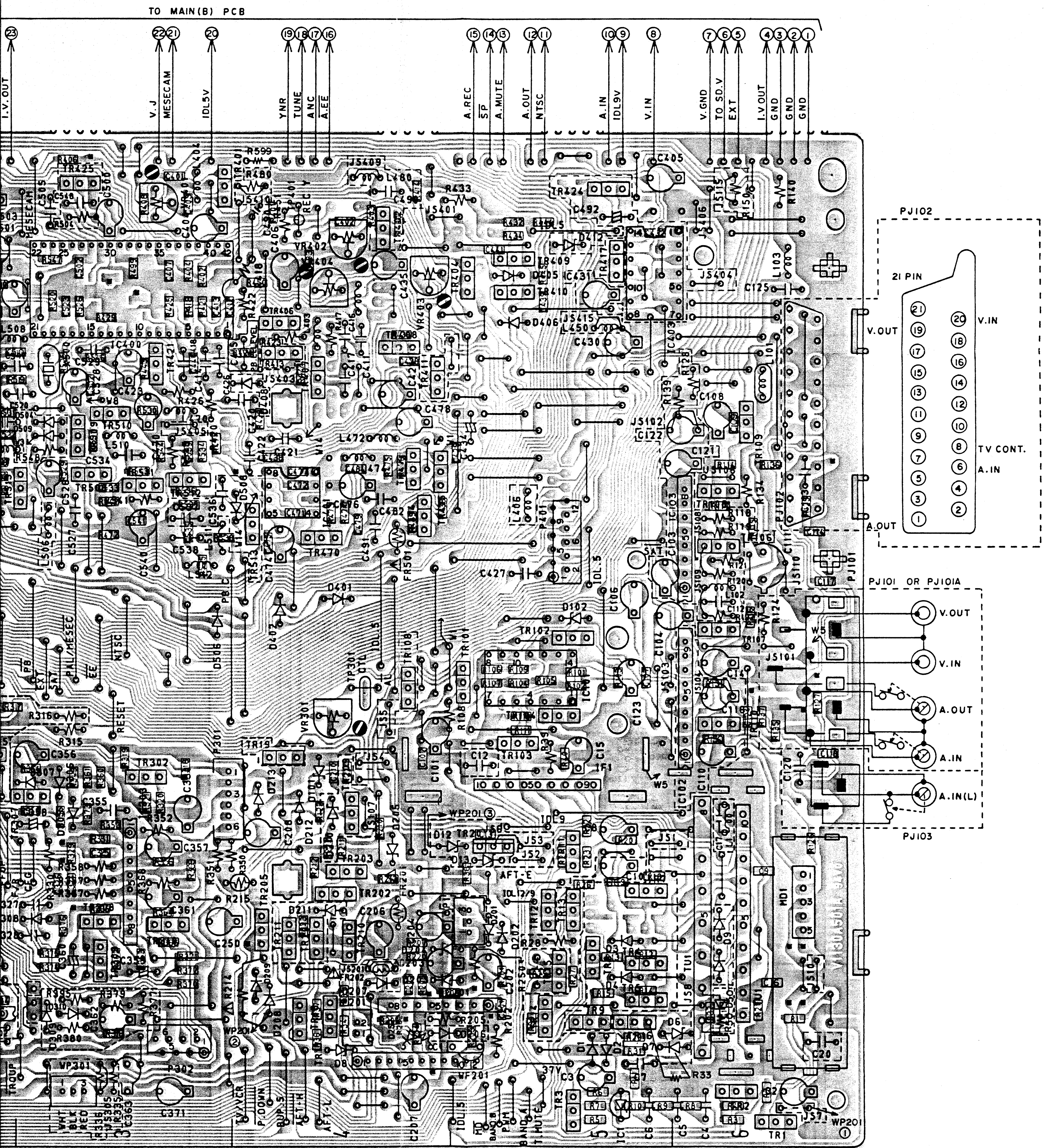
| | |
|---|---|
| TR1 | F6 |
| TR2 | F6 |
| TR3 | F5 |
| TR4 | F5 |
| TR5 | F5 |
| TR6 | F5 |
| TR7 | E5 |
| TR8 | F5 |
| TR9 | F5 |
| TR11 | E5 |
| TR12 | E5 |
| TR13 | E,F5 |
| TR14 | F5 |
| TR15 | F5 |
| TR16 | F5 |
| TR17 | F4 |
| TR18 | F4 |
| TR19 | E4 |
| TR20 | E5 |
| TR101 | D5 |
| TR102 | D5 |
| TR103 | E5 |
| TR104 | E5 |
| TR105 | D6 |
| TR107 | D6 |
| TR108 | D4 |
| TR109 | C6 |
| TR201 | F4 |
| TR202 | E4 |
| TR203 | E4 |
| TR205 | E,F4 |
| TR209 | F4 |
| TR210 | E,F4 |
| TR211 | F4 |
| TR301 | D1 |
| TR302 | E3 |
| TR303 | D,E2 |
| TR304 | D2 |
| TR306 | F1 |
| TR307 | E3 |
| TR308 | E,F4 |
| TR309 | F3 |
| TR310 | E,F3 |
| TR401 | B3 |
| TR404 | C5 |
| TR406 | C4 |
| TR407 | C4 |
| TR408 | C4 |
| TR409 | C5 |
| TR410 | C5 |
| TR414 | D4 |
| TR415 | C4 |
| TR417 | C5 |
| TR421 | C3 |
| TR423 | C2 |
| TR425 | B3 |
| TR470 | D4 |
| TR471 | C4 |
| TR501 | C2 |
| TR502 | C1 |
| TR503 | C1 |
| TR504 | C1 |
| TR505 | C2 |
| TR506 | C2 |
| TR507 | C2 |
| TR508 | C,D3 |
| TR509 | C3 |
| TR510 | C3 |
| TR511 | D3 |
| TR512 | C,D3 |
| TR513 | D4 |
| TR514 | C2 |
| TR515 | C2 |
| TR570 | C1 |
| TR571 | C1 |
| TR572 | C2 |


TO MAIN(B) PCB
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
CLK
STB
S.DATA
BGP I
SD.C
GND
V.SYNC
SD.P
AFC.H
PB.H.C
PB.C.OUT
1/2 f H
GND
I.V.OUT
V.J
MESECAM
IDL5V
B
C
D
E
F
NP
DL500
L405
IC301
IC402
IC400
P303
WP301
WP801
VP
SDP
V.SYNC
PAL/MESEC
NTSC
RESET
FLOW
402832J6.E6
VI130A501A

MAIN(A) PC

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


TO MAIN(B) PCB
I.V.OUT
V.J
MESECAM
IDL5V
YNR
TUNE
ANC
A.EE
A.REC
SP
A.MUTE
A.OUT
NTSC
A.IN
IDL9V
V.IN
V.GND
TO SD.V
EXT
I.V.OUT
GND
GND
GND
PJ102
21 PIN
V.OUT
V.IN
TV CONT.
A.IN
A.OUT
PJ101
PJ101 OR PJ101A
V.OUT
V.IN
A.OUT
A.IN
A.IN(L)
PJ103
WP201
VR301
VR402
VR403

MAIN(A) PCB V1130A501A(J6)

UED SAFETY,
UFACTURER'S

URITÉ.

FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

## PRINCIPAL PARTS LOCATION

**ICs**

| | |
|---|---|
| IC601 | A3 |
| IC602 | A1 |
| IC701 | A1 |
| IC702 | A2 |
| IC801 | A4 |
| IC902 | A6 |

**CONNECTORs**

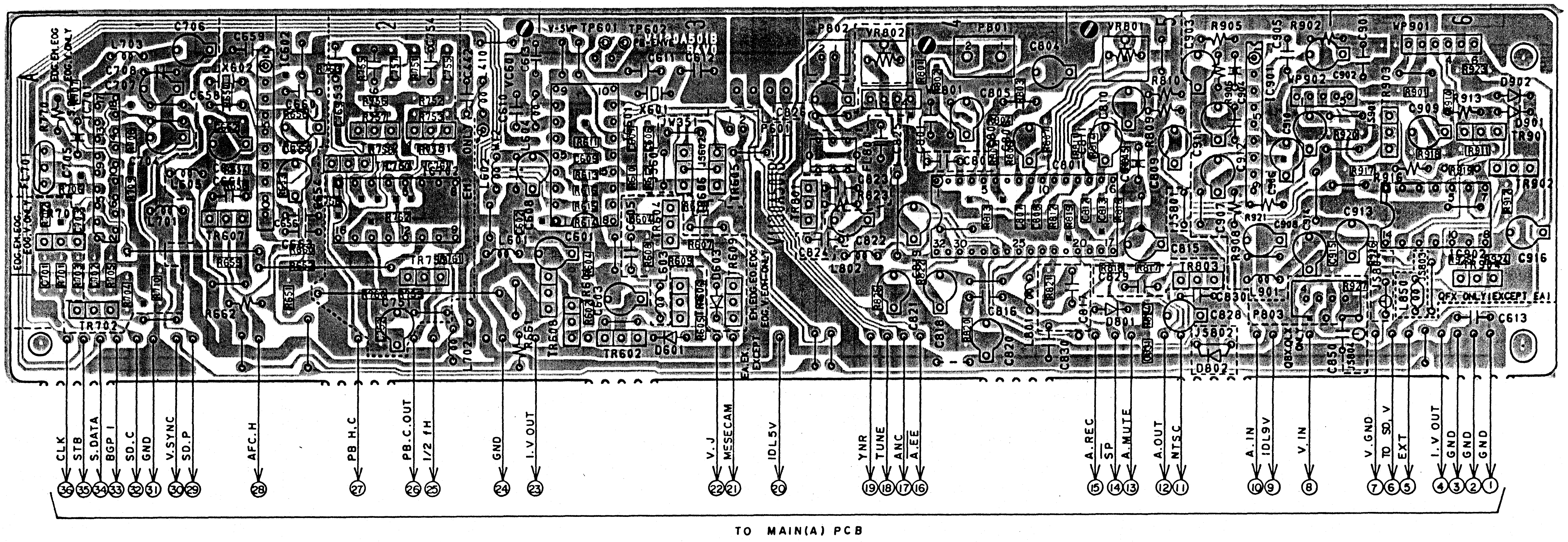
| | |
|---|---|
| P601 | A3 |
| P801 | A4 |
| P802 | A4 |
| P803 | A5,6 |

**WPs**

| | |
|---|---|
| WP801 | A4 |
| WP901 | A6 |
| WP902 | A5,6 |

**TRANSISTORs**

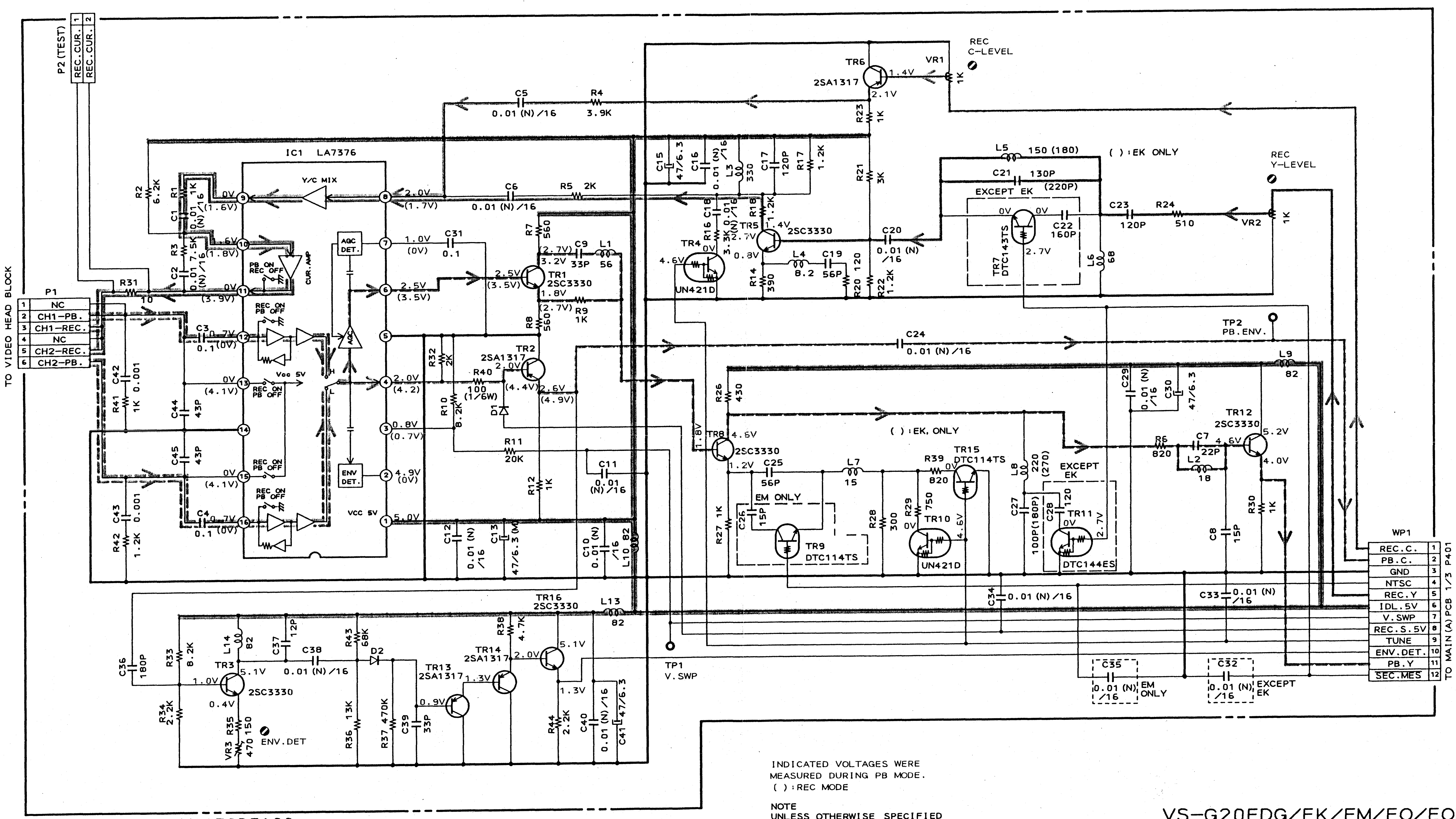
| | |
|---|---|
| TR601 | A3 |
| TR602 | A3 |
| TR603 | A3 |
| TR604 | A3 |
| TR605 | A3 |
| TR606 | A3 |
| TR607 | A1 |
| TR608 | A3 |
| TR609 | A3 |
| TR701 | A1 |
| TR702 | A1 |
| TR751 | A2 |
| TR752 | A2 |
| TR753 | A2 |
| TR754 | A2 |
| TR801 | A4 |
| TR803 | B5 |
| TR901 | A6 |
| TR902 | A6 |
| TR903 | A6 |
| TR904 | B6 |



CLK ㊱
STB ㉟
S.DATA ㉞
BGP I ㉝
SD.C ㉜
GND ㉛
V.SYNC ㉚
SD.P ㉙
AFC.H ㉘
PB H.C ㉗
PB.C.OUT ㉖
1/2 fH ㉕
GND ㉔
I.V OUT ㉓
V.J ㉒
MESECAM ㉑
IDL5V ⑳
YNR ⑲
TUNE ⑱
ANC ⑰
A.EE ⑯
A.REC ⑮
SP ⑭
A.MUTE ⑬
A.OUT ⑫
NTSC ⑪
A.IN ⑩
IDL9V ⑨
V.IN ⑧
V.GND ⑦
TO SD.V ⑥
EXT ⑤
I.V OUT ④
GND ③
GND ②
GND ①
TO MAIN(A) PCB
TR702
TR602
D601
P601
P801
P802
VR801
VR802
WP901
C706
C613
QFX ONLY(EXCEPT EA)

MAIN(B) PCB VI130A501B(J6)

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


P2 (TEST)
REC.CUR. 1
REC.CUR. 2
TO VIDEO HEAD BLOCK
P1
1 NC
2 CH1-PB.
3 CH1-REC.
4 NC
5 CH2-REC.
6 CH2-PB.
IC1 LA7376
Y/C MIX
CUR.AMP
AGC DET.
AGC
ENV DET.
Vcc 5V
REC ON
PB OFF
PB ON
REC OFF
R31 10
R2 6.2K
R1 1K
C1 0.01 (N)/16
R3 7.5K
C2 0.01 (N)/16
C3 0.1
C4 0.1
C42 0.001
R41 1K
C44 43P
C45 43P
C43 0.001
R42 1.2K
C5 0.01 (N)/16
R4 3.9K
C6 0.01 (N)/16
R5 2K
C31 0.1
R7 560
C9 33P
L1 56
TR1 2SC3330
R9 1K
R8 560
TR2 2SA1317
R32 2K
R40 100 (1/6W)
R10 8.2K
D1
R11 20K
R12 1K
C11 0.01 (N)/16
C12 0.01 (N)/16
C13 47/6.3 (M)
C10 0.01 (N)/16
L10 82
TR6 2SA1317
VR1 1K
REC C-LEVEL
R23 1K
R21 3K
R22 1.2K
C15 47/6.3
C16 0.01 (N)/16
L3 330
C17 120P
R17 1.2K
C18 0.01 (N)/16
R16 3.3K
R18 1.2K
TR5 2SC3330
TR4 UN421D
L4 8.2
C19 56P
R14 390
R20 120
C20 0.01 (N)/16
L5 150 (180)
( ) : EK ONLY
C21 130P (220P)
EXCEPT EK
TR7 DTC143TS
C22 160P
L6 68
C23 120P
R24 510
VR2 1K
REC Y-LEVEL
TP2 PB.ENV.
C24 0.01 (N)/16
L9 82
R26 430
C29 0.01 (N)/16
C30 47/6.3
TR8 2SC3330
( ) : EK, ONLY
C25 56P
L7 15
R39 820
TR15 DTC114TS
L8 220 (270)
EXCEPT EK
TR12 2SC3330
R6 820
C7 22P
L2 18
EM ONLY
C26 15P
TR9 DTC114TS
R27 1K
R28 300
R29 750
TR10 UN421D
C27 100P (180P)
C28 120
TR11 DTC144ES
C8 15P
R30 1K
C34 0.01 (N)/16
C33 0.01 (N)/16
C35 0.01 (N)/16 EM ONLY
C32 0.01 (N)/16 EXCEPT EK
WP1
1 REC.C.
2 PB.C.
3 GND
4 NTSC
5 REC.Y
6 IDL.5V
7 V.SWP
8 REC.S.5V
9 TUNE
10 ENV.DET.
11 PB.Y
12 SEC.MES
TO MAIN (A) PCB 1/3 P401
TR16 2SC3330
L13 82
C36 180P
R33 8.2K
L14 82
C37 12P
C38 0.01 (N)/16
R43 68K
D2
TR3 2SC3330
R34 2.2K
R35 150
VR3 470
ENV.DET
TR13 2SA1317
TR14 2SA1317
R38 4.7K
R36 13K
R37 470K
C39 33P
R44 2.2K
C40 0.01 (N)/16
C41 47/6.3
TP1 V.SWP

PRE AMP PCB V1130B5100

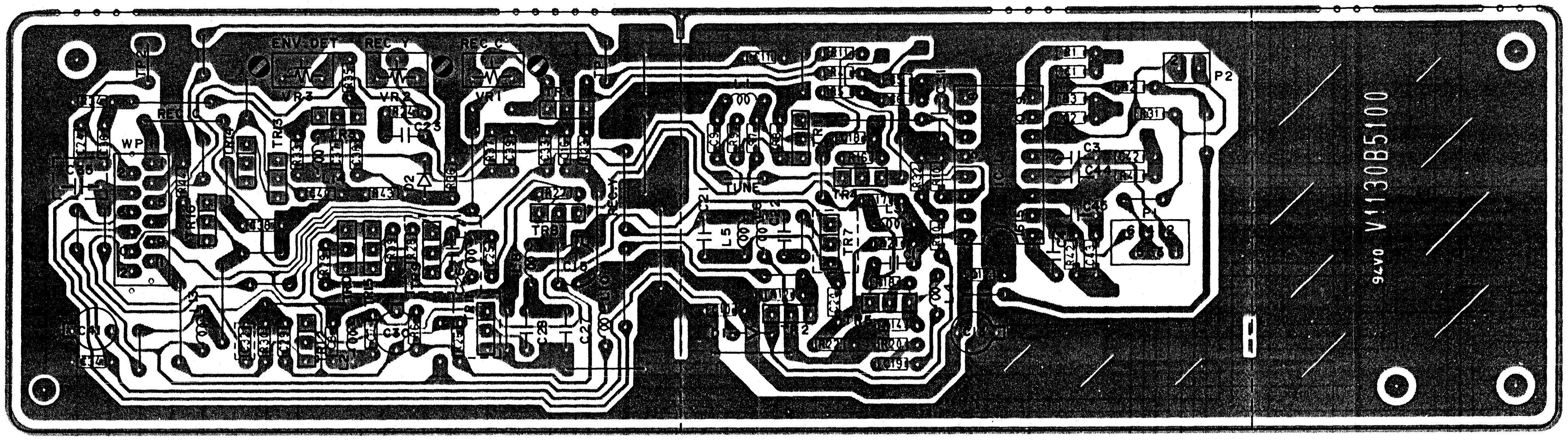
- B (POWER SUPPLY) LINE
- PB Y SIGNAL LINE
- REC Y SIGNAL LINE
- PB CHROMA SIGNAL LINE
- REC CHROMA SIGNAL LINE

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M)
ALL INDUCTORS IN µH (K)

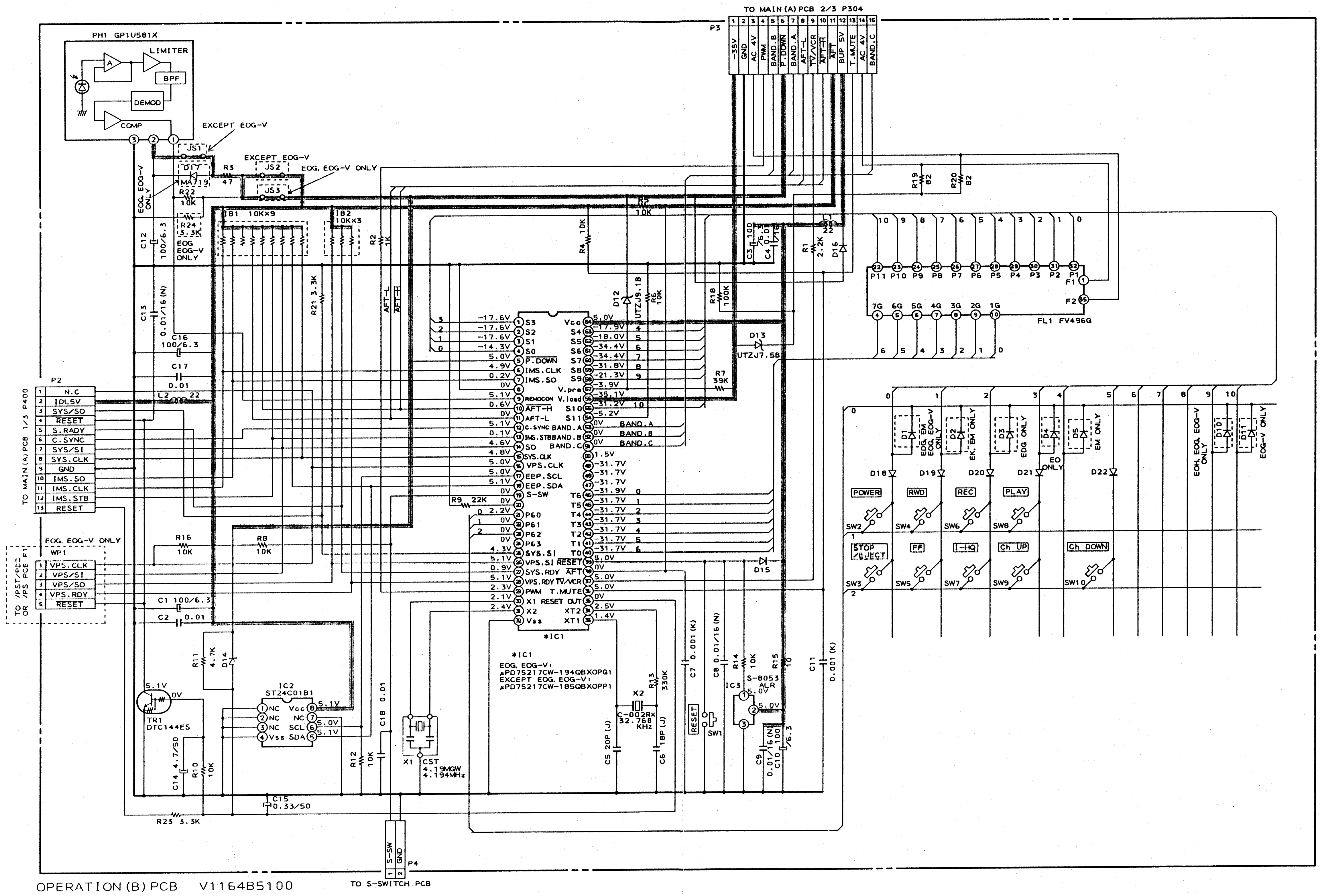
## VS-G20EDG/EK/EM/EO/EOH
## VS-G21EOH, G23EOH
## VS-G24EOG/EK, G25EOG-V
## PRE AMP
## SCHEMATIC DIAGRAM

No.19-9 V116409M


ENV DET
REC Y
REC C
VR3
VR2
VR1
WP
TR3
TR8
TUNE
L5
TR4
TR7
P2
P1
V1130B5100
94V0

PRE AMP PCB V1130B5100

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTAINING
PARTS INFORMATION.


TO MAIN (A) PCB 2/3 P304
P3
-35V
GND
AC 4V
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
BUP 5V
T.MUTE
AC 4V
BAND.C
PH1 GP1U581X
LIMITER
BPF
DEMOD
COMP
EXCEPT EOG-V
JS1
JS2
JS3
EOG, EOG-V ONLY
D17 MA719
R3 47
R22 10K
R24 3.3K
IB1 10K×9
IB2 10K×3
C12 100/6.3
C13 0.01/16 (N)
C16 100/6.3
C17 0.01
L2 22
P2
N.C
IDL5V
SYS/SO
RESET
S.RADY
C.SYNC
SYS/SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
TO MAIN (A) PCB 1/3 P400
EOG, EOG-V ONLY
WP1
VPS.CLK
VPS/SI
VPS/SO
VPS.RDY
RESET
TO VPST/PCE OR VPS PCE P1
R16 10K
R8 10K
C1 100/6.3
C2 0.01
R9 22K
R11 4.7K
D14
TR1 DTC144ES
IC2 ST24C01B1
C14 4.7/50
R10 10K
R23 3.3K
C15 0.33/50
R12 10K
C18 0.01
X1 CST 4.19MGW 4.194MHz
P4 S-SW GND
TO S-SWITCH PCB
*IC1
*IC1
EOG, EOG-V: μPD75217CW-194QBXOPG1
EXCEPT EOG, EOG-V: μPD75217CW-185QBXOPP1
X2 C-002RX 32.768 KHz
R13 330K
C5 20P (J)
C6 18P (J)
C7 0.001 (K)
C8 0.01/16 (N)
R14 10K
R15 10
IC3 S-8053 ALR
C9 0.01/16 (N)
C10 100/6.3
C11 0.001 (K)
SW1 RESET
R4 10K
R5 10K
R6 10K
R7 39K
R18 100K
R1 2.2K
D12 UTZJ9.1B
D13 UTZJ7.5B
D15
D16
L1 22
C3 100/6.3
C4 0.01
R19 82
R20 82
R2 1K
R21 3.3K
FL1 FV496G
POWER
RWD
REC
PLAY
STOP/EJECT
FF
I-HQ
Ch UP
Ch DOWN
SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10
D18 D19 D20 D21 D22
D1 EOG, EM, EOG-V ONLY
D2 EK, EM ONLY
D3 EDG ONLY
D4 EO ONLY
D5 EM ONLY
D10 EOH, EOG, EOG-V ONLY
D11 EOG-V ONLY
OPERATION (B) PCB V1164B5100

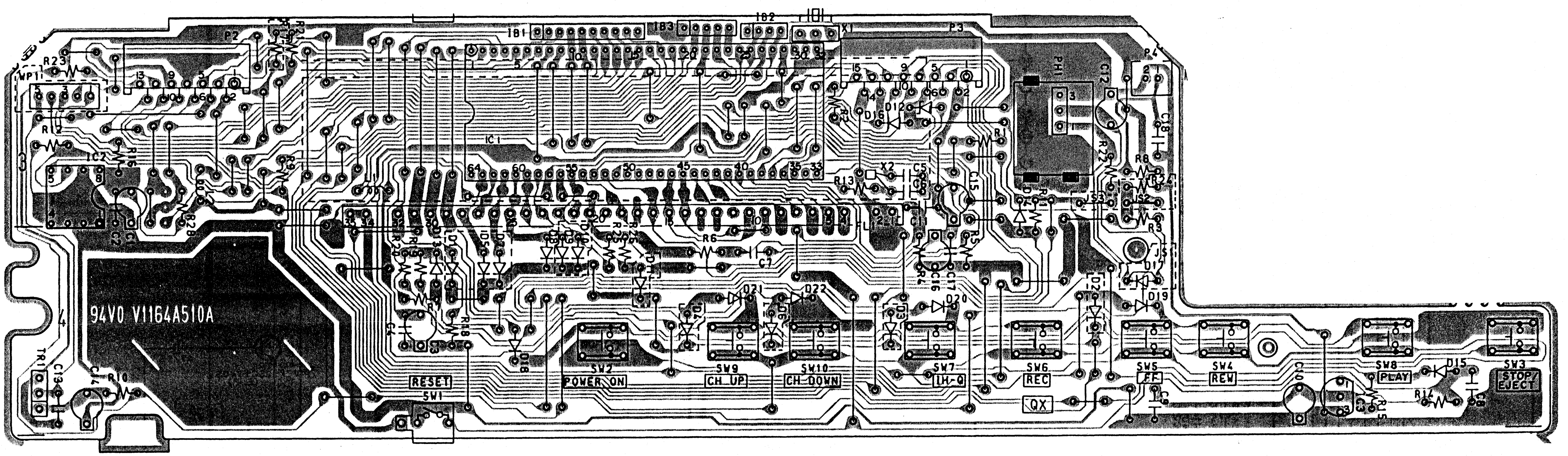
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL DIODES ARE 1SS131T

B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

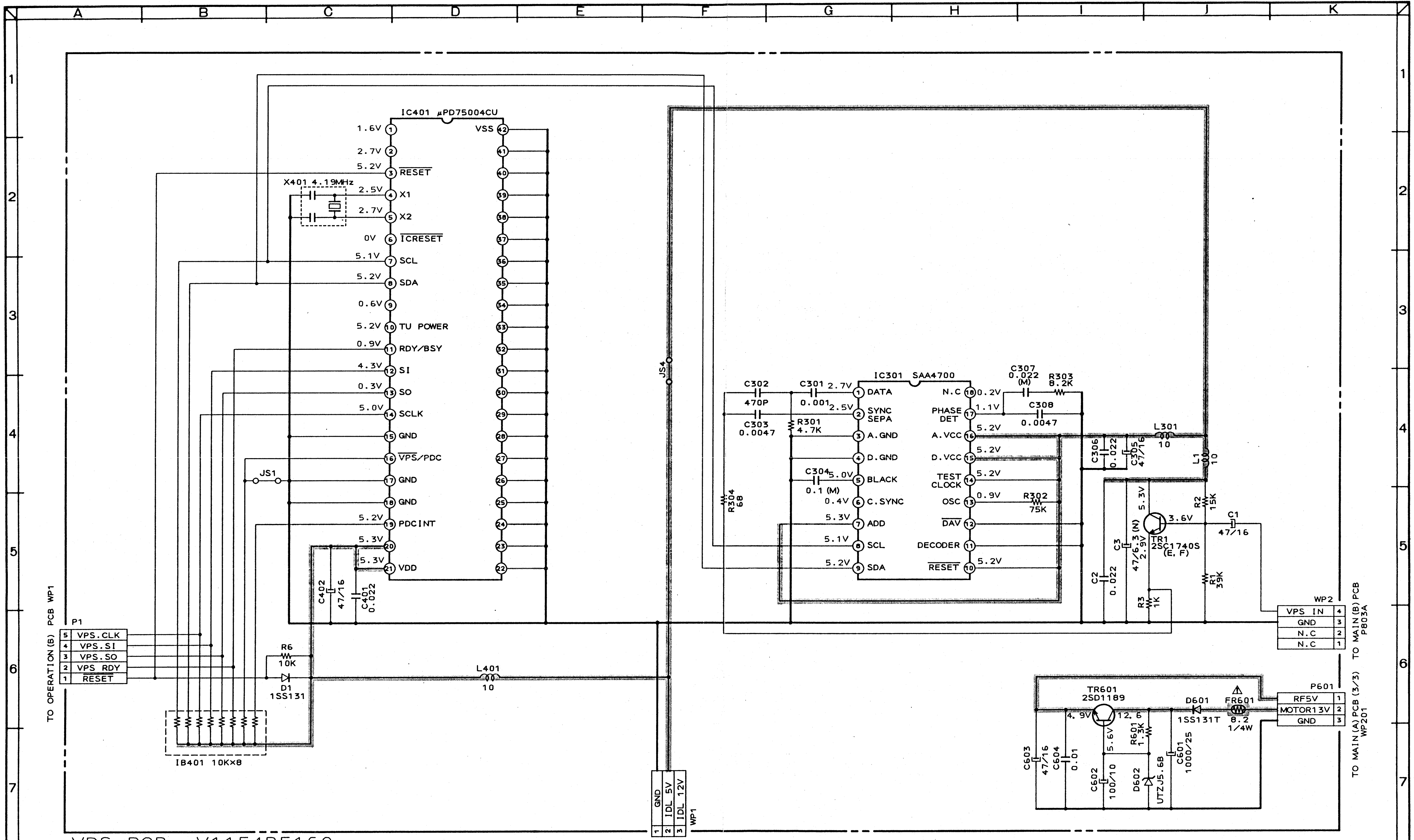
VS-G20EDG/EK/EM/EO/EOH
VS-G21EOH, G23EOH
VS-G24EOG/EK , G25EOG-V
OPERATION (B)
SCHEMATIC DIAGRAM

No.19-10 V116410M
A2


IB1
IB2
IB3
X1
X2
P2
P3
P4
PH1
WP1
IC1
IC2
TR1
94V0 V1164A510A
RESET
SW1
SW2
POWER ON
SW9
CH UP
SW10
CH DOWN
SW7
1H-Q
SW6
REC
SW5
FF
QX
SW4
REW
SW8
PLAY
SW3
STOP/
EJECT

OPERATION (B) PCB V1164A510A

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



A B C D E F G H I J K
1 2 3 4 5 6 7 8
IC401 μPD75004CU
1.6V 1
2.7V 2
5.2V 3 RESET
X401 4.19MHz
2.5V 4 X1
2.7V 5 X2
0V 6 ICRESET
5.1V 7 SCL
5.2V 8 SDA
0.6V 9
5.2V 10 TU POWER
0.9V 11 RDY/BSY
4.3V 12 SI
0.3V 13 SO
5.0V 14 SCLK
15 GND
16 VPS/PDC
JS1
17 GND
18 GND
5.2V 19 PDCINT
5.3V 20
5.3V 21 VDD
VSS 42
41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22
C402 47/16
C401 0.022
P1
5 VPS.CLK
4 VPS.SI
3 VPS.SO
2 VPS RDY
1 RESET
TO OPERATION (B) PCB WP1
R6 10K
D1 1SS131
L401 10
IB401 10K×8
JS4
GND
IDL 5V
IDL 12V
1 2 3
WP1
TO MAIN (A) PCB 3/3 P
IC301 SAA4700
C302 470P
C303 0.0047
C301 0.001
R301 4.7K
R304 68
C304 0.1 (M)
2.7V 1 DATA
2.5V 2 SYNC SEPA
3 A.GND
4 D.GND
5.0V 5 BLACK
0.4V 6 C.SYNC
5.3V 7 ADD
5.1V 8 SCL
5.2V 9 SDA
N.C 18 0.2V
PHASE DET 17 1.1V
A.VCC 16 5.2V
D.VCC 15 5.2V
TEST CLOCK 14 5.2V
OSC 13 0.9V
DAV 12
DECODER 11
RESET 10 5.2V
C307 0.022 (M)
R303 8.2K
C308 0.0047
R302 75K
L301 10
C306 0.022
C305 47/16
L1 10
C3 47/6.3 (N)
C2 0.022
5.3V
2.9V
3.6V
TR1 2SC1740S (E, F)
R2 15K
R1 39K
R3 1K
C1 47/16
WP2
VPS IN 4
GND 3
N.C 2
N.C 1
TO MAIN (B) PCB P803A
TR601 2SD1189
4.9V
12.6
5.6V
R601 1.3K
D601 1SS131T
FR601 8.2 1/4W
C603 47/16
C604 0.01
C602 100/10
D602 UTZJ5.6B
C601 1000/25
P601
RF5V 1
MOTOR13V 2
GND 3
TO MAIN (A) PCB (3/3) WP201

VPS PCB V1154B5160

▨ :B (POWER SUPPLY) LINE

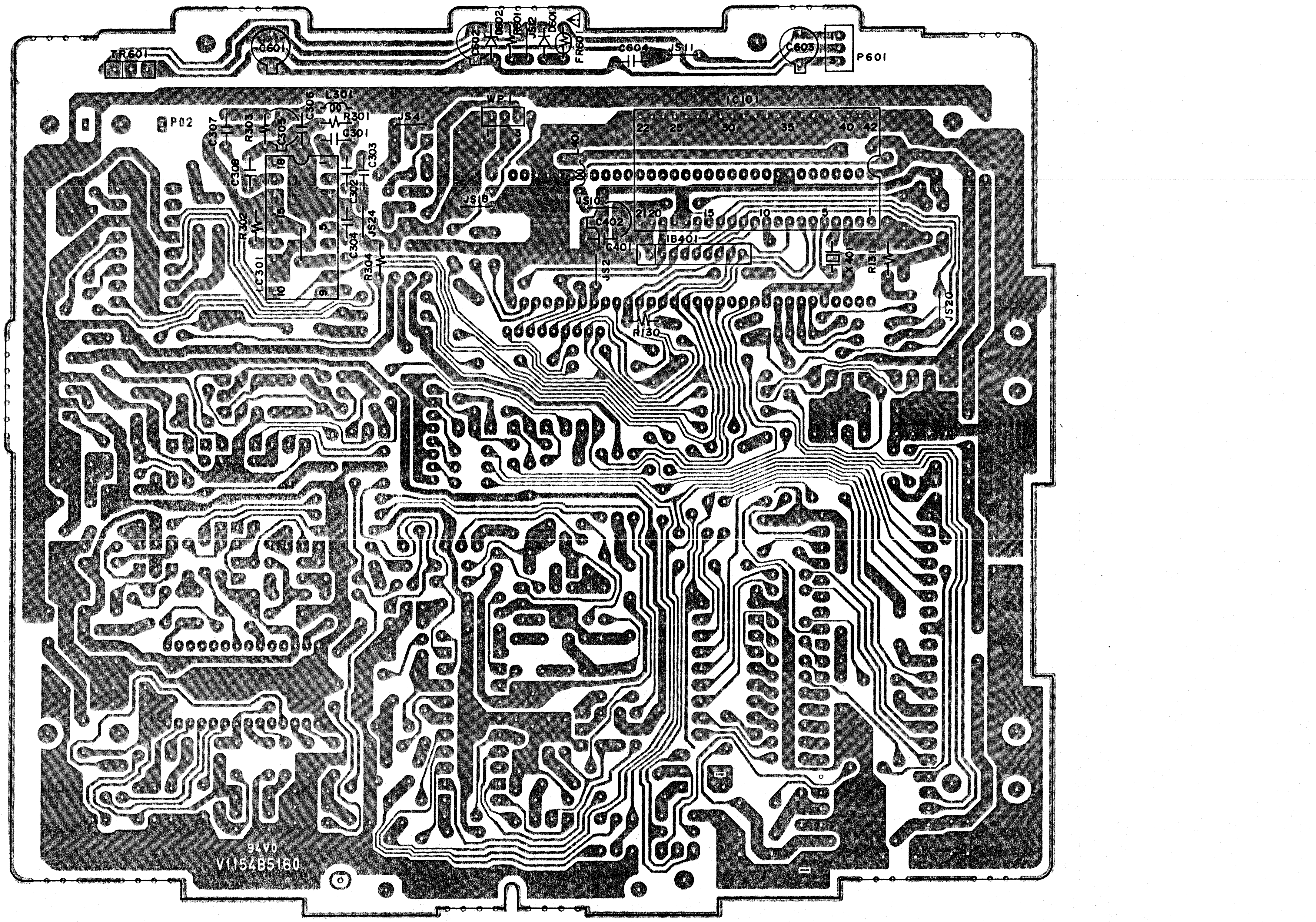
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTOR IN μH

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER'S RECOMMENDED
PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES
COMPOSTANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
DE L'APPAREIL, NE REMPLACER QUE DES
PIÈCES RECOMMANDEES PAR LE FABRICANT

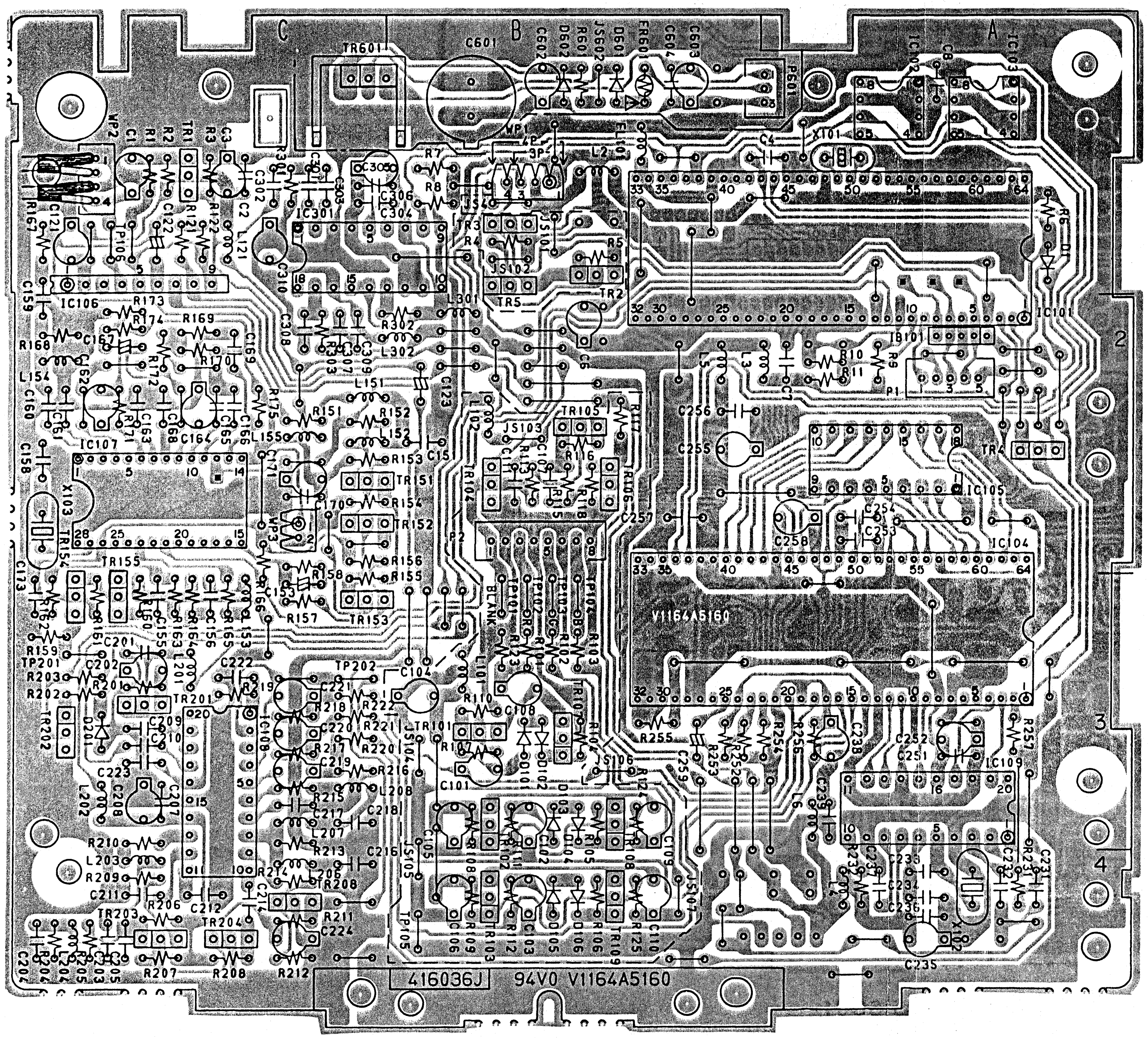
VS-G24EOG
VPS
SCHEMATIC DIAGRAM
No.19-11 V116411M
A3


TR601
C601
D602
R601
JS12
D601
FR601
C604
JS11
C603
P601
P02
C307
R303
C305
C306
L301
R301
C301
JS4
C303
C308
C302
R302
IC301
C304
JS24
R304
WP
JS18
IC101
22
25
30
35
40
42
JS10
C402
C401
IB401
JS2
R130
X401
R131
JS20
94V0
V1154B5160

VPS PCB V1154B5160J1

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


A
B
C
1
2
3
4
IC101
IC104
IC105
IC106
IC107
IC108
IC109
IC301
V1164A5160
416036J 94V0 V1164A5160

VPST/PDC PCB V1164A5160

## PRINCIPAL PARTS LOCATION

### ICs

| | |
|---|---|
| IC101 | A,B1 |
| IC102 | A1 |
| IC103 | A1 |
| IC104 | A,B3 |
| IC105 | A2 |
| IC106 | C1 |
| IC107 | C2 |
| IC108 | C3 |
| IC109 | A3 |
| IC301 | B,C1 |

### WIREs

| | |
|---|---|
| WP1 | B1 |
| WP2 | C1 |
| WP3 | C2 |

### CONNECTORs

| | |
|---|---|
| P1 | A2 |
| P601 | A,B1 |

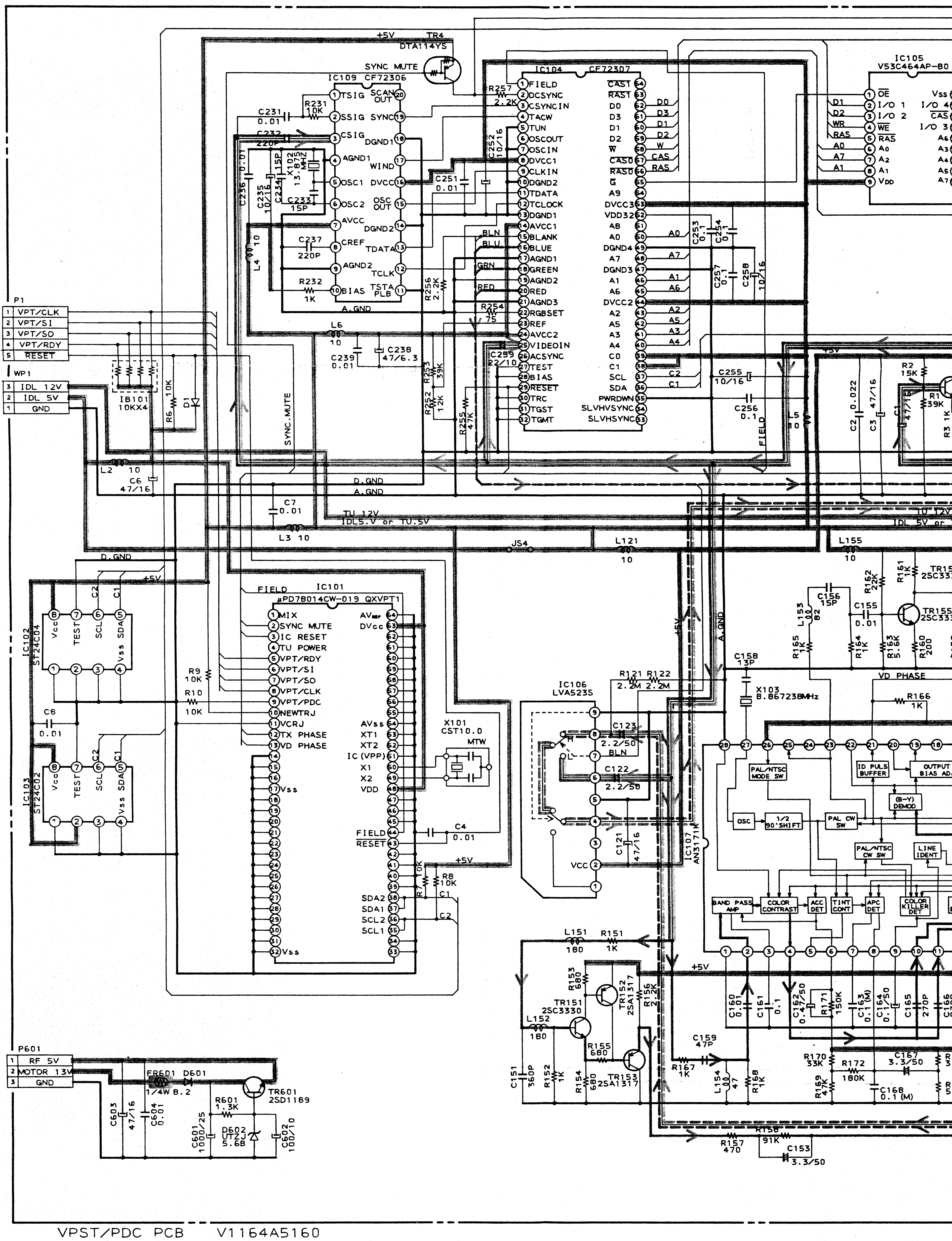
### TRANSISTORs

| | |
|---|---|
| TR1 | C1 |
| TR4 | A2 |
| TR151 | C2 |
| TR152 | C2 |
| TR153 | C3 |
| TR154 | C3 |
| TR155 | C3 |
| TR201 | C3 |
| TR202 | C3 |
| TR203 | C4 |
| TR204 | C4 |
| TR208 | C4 |
| TR601 | C1 |

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


IC104 CF72307
IC105 V53C464AP-80
IC109 CF72306
TR4 DTA114YS
SYNC MUTE
X102 13.875MHz
IC101 μPD78014CW-019 QXVPT1
X101 CST10.0 MTW
IC102 ST24C04
IC103 ST24C02
IB101 10KX4
P1
VPT/CLK
VPT/SI
VPT/SO
VPT/RDY
RESET
WP1
IDL 12V
IDL 5V
GND
TO OPERATION (B) PCB WP1
TO MAIN (A) PCB 3/3 P1
IC106 LVA523S
IC107 AN3171K
X103 8.867238MHz
TR151 2SC3330
TR152 2SA1317
TR153 2SA1317
TR155 2SC333
P601
RF 5V
MOTOR 13V
GND
TO MAIN (A) PCB 3/3 WP201
TR601 2SD1169
D602 UTZJ 5.6B
D.GND
A.GND
TU 12V
IDL5.V or TU.5V
JS4
L121
L155
VD PHASE
FIELD
SYNC.MUTE
+5V
BAND PASS AMP
COLOR CONTRAST
ACC DET
TINT CONT
APC DET
COLOR KILLER DET
PAL/NTSC MODE SW
ID PULS BUFFER
OUTPUT BIAS AD
(B-Y) DEMOD
OSC
1/2 90°SHIFT
PAL CW SW
PAL/NTSC CW SW
LINE IDENT

VPST/PDC PCB     V1164A5160

▬▬▬▬▬▬:B (POWER SUPPLY) LINE

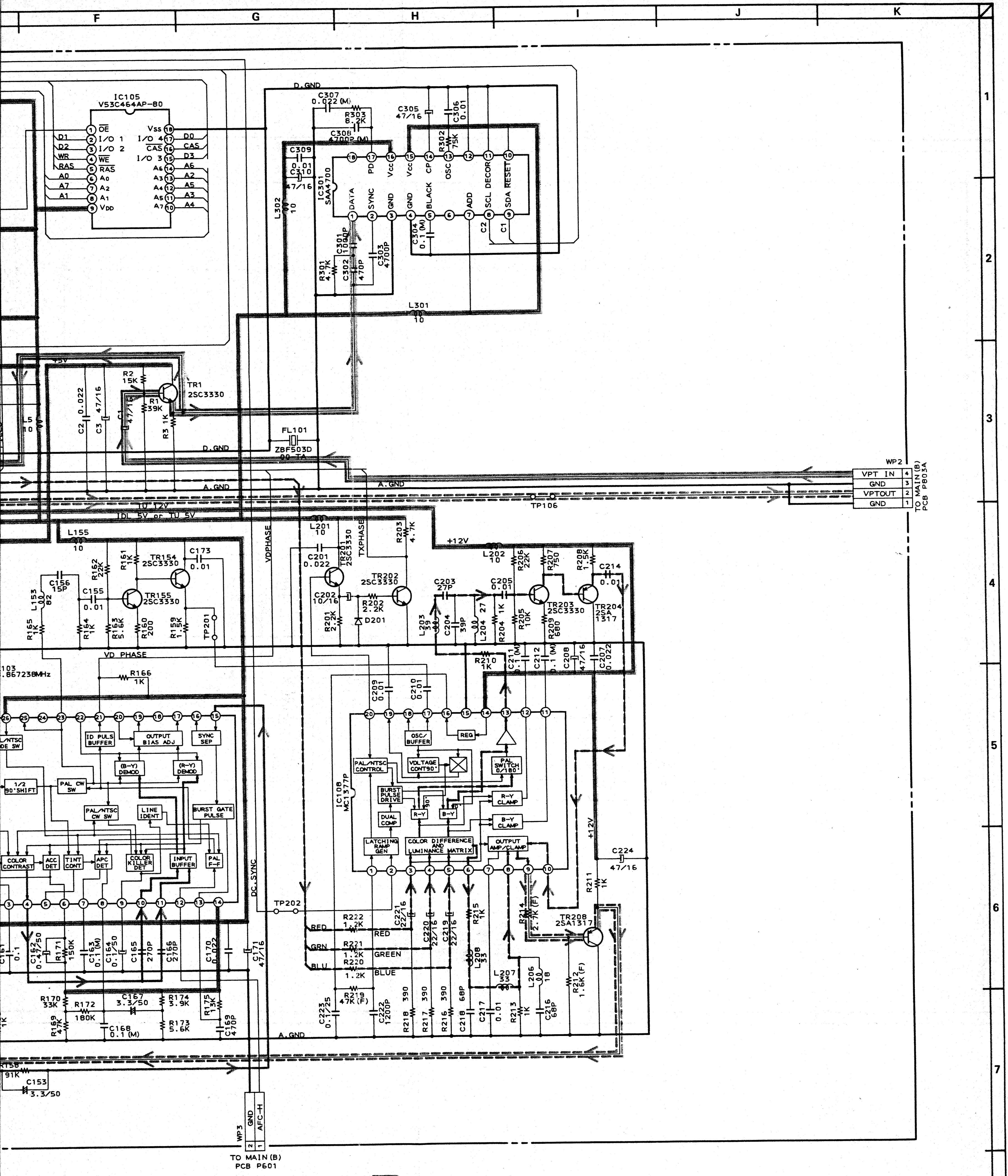
――――――:Y IN (TUNER) SIGNAL

- - - - - -:Y VPT SIGNAL

――――――:CHROMA IN (TUNER) SIGNAL

- - - - - -:CHROMA VPT SIGNAL

NOTE
UNLESS OTH
ALL RESIST
ALL CAPACI
ALL INDUCT
ALL DIODES



F
G
H
I
J
K
1
2
3
4
5
6
7
IC105
V53C464AP-80
OE
I/O 1
I/O 2
WE
RAS
VDD
Vss
I/O 4
CAS
I/O 3
D1
D2
WR
RAS
A0
A7
A1
D0
CAS
D3
A6
A2
A5
A3
A4
D.GND
C307
0.022 (M)
R303
8.2K
C305
47/16
C306
0.01
C308
4700P (M)
R302
75K
C309
0.01
C310
47/16
L302
10
IC301
SAA4700
DATA
SYNC
GND
BLACK
ADD
SCL
SDA
PD
Vcc
CP
OSC
DECOR
RESET
C2
C1
C304
0.1 (M)
R301
4.7K
C301
100P
C302
470P
C303
4700P
L301
10
+5V
R2
15K
TR1
2SC3330
R1
39K
R3 1K
C2 0.022
C3 47/16
C1 47/16
L5
10
D.GND
FL101
ZBF503D
00 TA
A.GND
A.GND
TU 12V
IDL 5V or TU 5V
TP106
WP2
VPT IN
GND
VPTOUT
GND
TO MAIN (B)
PCB P803A
L155
10
VDPHASE
TXPHASE
L201
10
C201
0.022
TR201
2SC3330
R203
4.7K
+12V
L202
10
R206
22K
R207
750
R208
1.5K
C214
0.01
R162
22K
R161
1K
TR154
2SC3330
C173
0.01
C156
15P
L153
82
C155
0.01
TR155
2SC3330
R165
1K
R164
1K
R163
5.6K
R160
200
R159
1.5K
TP201
TR202
2SC3330
C202
10/16
R202
2.2K
D201
R201
22K
C203
27P
C205
0.01
TR203
2SC3330
TR204
2SA1317
L203
39
C204
39P
L204
27
R204
1K
R205
10K
R209
680
R210
1K
C211
0.1 (M)
C212
0.1 (M)
C208
47/16
C207
0.022
VD PHASE
103
.867238MHz
R166
1K
C209
0.01
C210
0.01
ID PULS BUFFER
OUTPUT BIAS ADJ
SYNC SEP
(B-Y) DEMOD
(R-Y) DEMOD
1/2 90°SHIFT
PAL CW SW
PAL/NTSC CW SW
LINE IDENT
BURST GATE PULSE
COLOR CONTRAST
ACC DET
TINT CONT
APC DET
COLOR KILLER DET
INPUT BUFFER
PAL F-F
DC SYNC
IC108
MC1377P
PAL/NTSC CONTROL
OSC/BUFFER
REG
VOLTAGE CONT90°
PAL SWITCH 0/180°
BURST PULSE DRIVE
R-Y
B-Y
R-Y CLAMP
DUAL COMP
B-Y CLAMP
LATCHING RAMP GEN
COLOR DIFFERENCE AND LUMINANCE MATRIX
OUTPUT AMP/CLAMP
+12V
C224
47/16
R211
1K
TP202
R222
1.2K
RED
C221
22/16
C220
22/16
C219
22/16
R215
1K
R214
2.7K (F)
TR208
2SA1317
GRN
R221
1.2K
GREEN
BLU
R220
1.2K
BLUE
L208
33
L207
33
L206
18
R212
1.6K (F)
R219
47K (F)
C223
0.1/25
C222
1200P
R218 390
R217 390
R216 390
C218 68P
C217 0.01
R213 1K
C216 68P
C161 0.1
C162 0.47/50
R171 150K
C163 0.1 (M)
C164 0.1/50
C165 270P
C166 270P
C170 0.022
C171 47/16
R170 33K
R172 180K
C167 3.3/50
R174 3.9K
R175 13K
R169 47K
C168 0.1 (M)
R173 5.6K
C169 470P
A.GND
R156
91K
C153
3.3/50
WP3
GND
AFC-H
TO MAIN (B)
PCB P601

AL

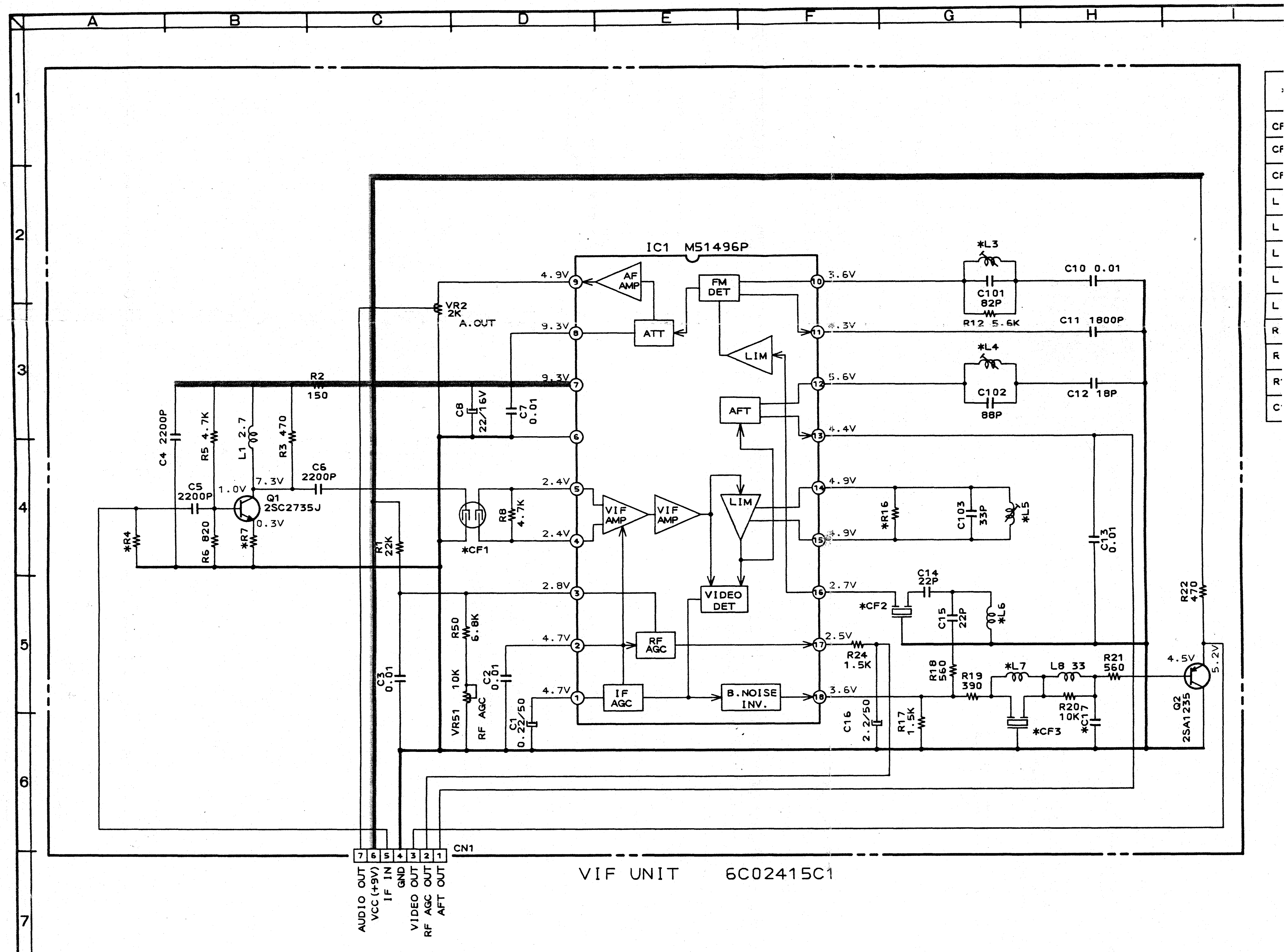
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W
ALL CAPACITORS IN µF
ALL INDUCTORS IN µH
ALL DIODES ARE 1SS131

WARNING: AND▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-G25EOG-V
VPST/PDC
SCHEMATIC DIAGRAM
No.19-12 V116412M A1

F G H I J K 8



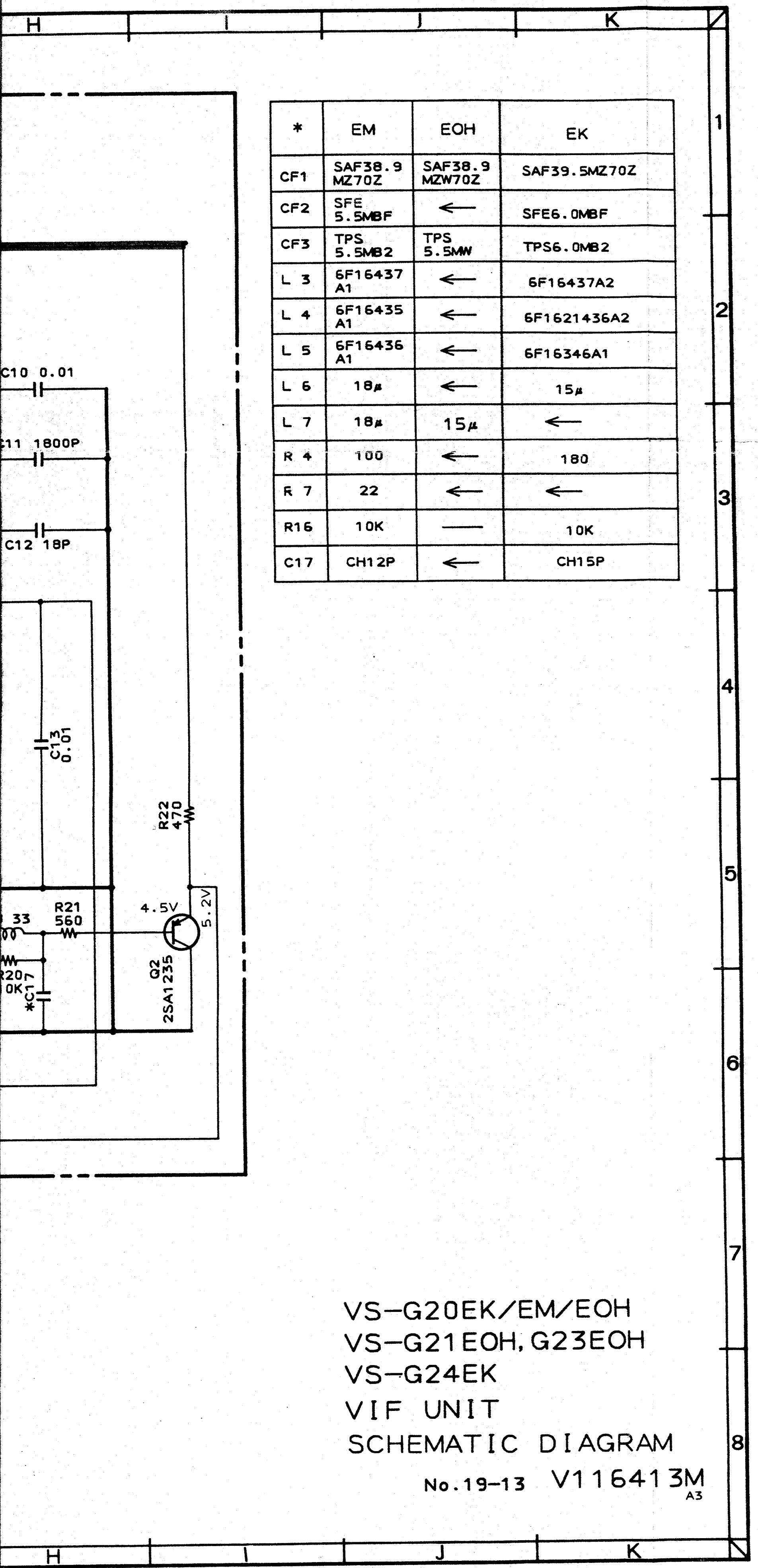
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
VR2 2K
A.OUT
R2 150
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
Q1 2SC2735J
1.0V
7.3V
0.3V
*R4
R6 820
*R7
R1 22K
C8 22/16V
C7 0.01
*CF1
R8 4.7K
R50 6.8K
10K
VR51 RF AGC
C2 0.01
C1 0.22/50
C3 0.01
4.9V
9.3V
9.3V
2.4V
2.4V
2.8V
4.7V
4.7V
3.6V
4.3V
5.6V
4.4V
4.9V
4.9V
2.7V
2.5V
3.6V
*L3
C101 82P
R12 5.6K
C10 0.01
C11 1800P
*L4
C102 88P
C12 18P
*R16
C103 33P
*L5
C13 0.01
C14 22P
*CF2
C15 22P
*L6
R24 1.5K
C16 2.2/50
R17 1.5K
R18 560
R19 390
*L7
L8 33
R207 10K
*C17
*CF3
R21 560
R22 470
4.5V
5.2V
Q2 2SA1235
CN1
7 6 5 4 3 2 1
AUDIO OUT
VCC (+9V)
IF IN
GND
VIDEO OUT
RF AGC OUT
AFT OUT

VIF UNIT 6C02415C1

B (POWER SUPPLY) LINE

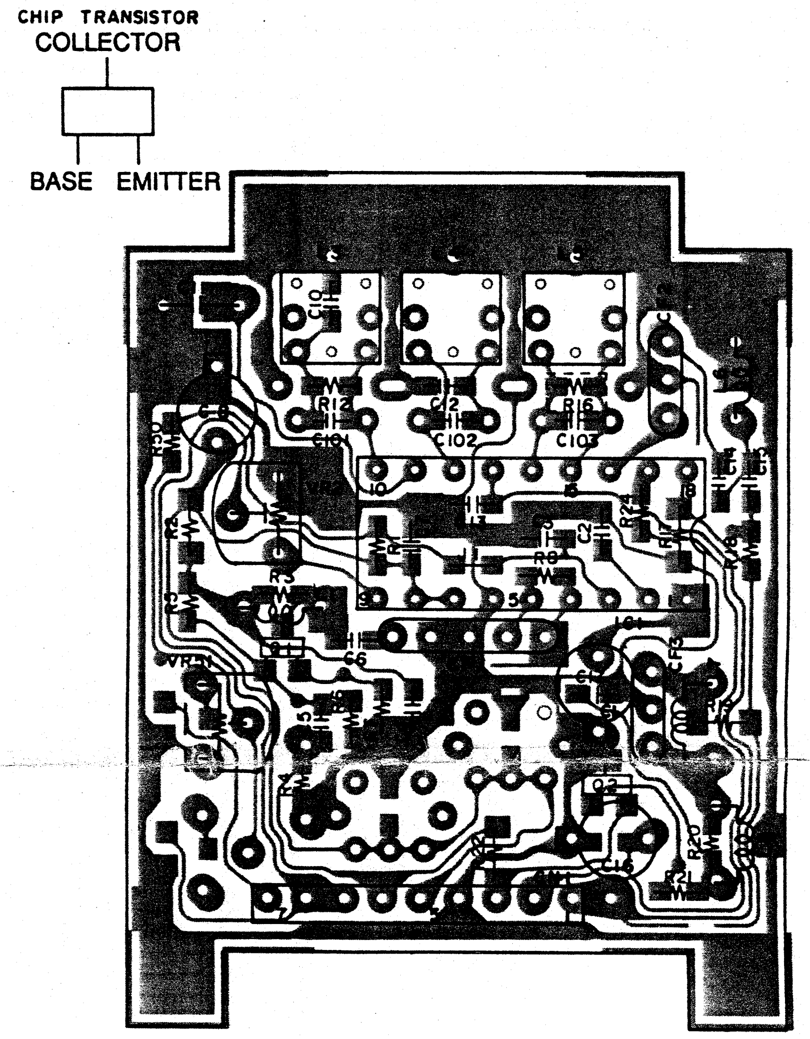
INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION IS TUNED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH (K)

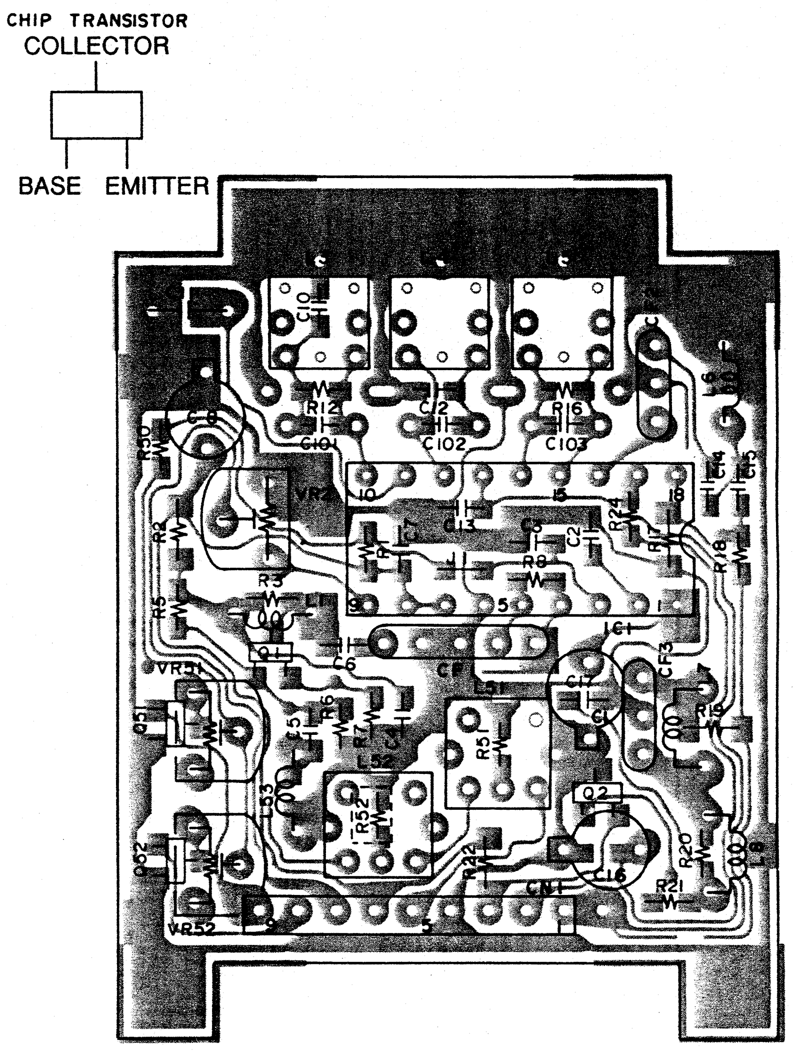

H
I
J
K
1
2
3
4
5
6
7
8
C10 0.01
C11 1800P
C12 18P
C13 0.01
R22 470
5.2V
4.5V
R21 560
33
R20 10K
*C17
Q2 2SA1235

| * | EM | EOH | EK |
|---|---|---|---|
| CF1 | SAF38.9 MZ70Z | SAF38.9 MZW70Z | SAF39.5MZ70Z |
| CF2 | SFE 5.5MBF | ← | SFE6.0MBF |
| CF3 | TPS 5.5MB2 | TPS 5.5MW | TPS6.0MB2 |
| L 3 | 6F16437 A1 | ← | 6F16437A2 |
| L 4 | 6F16435 A1 | ← | 6F1621436A2 |
| L 5 | 6F16436 A1 | ← | 6F16346A1 |
| L 6 | 18µ | ← | 15µ |
| L 7 | 18µ | 15µ | ← |
| R 4 | 100 | ← | 180 |
| R 7 | 22 | ← | ← |
| R16 | 10K | — | 10K |
| C17 | CH12P | ← | CH15P |

VS-G20EK/EM/EOH
VS-G21EOH, G23EOH
VS-G24EK
VIF UNIT
SCHEMATIC DIAGRAM
No.19-13 V116413M A3

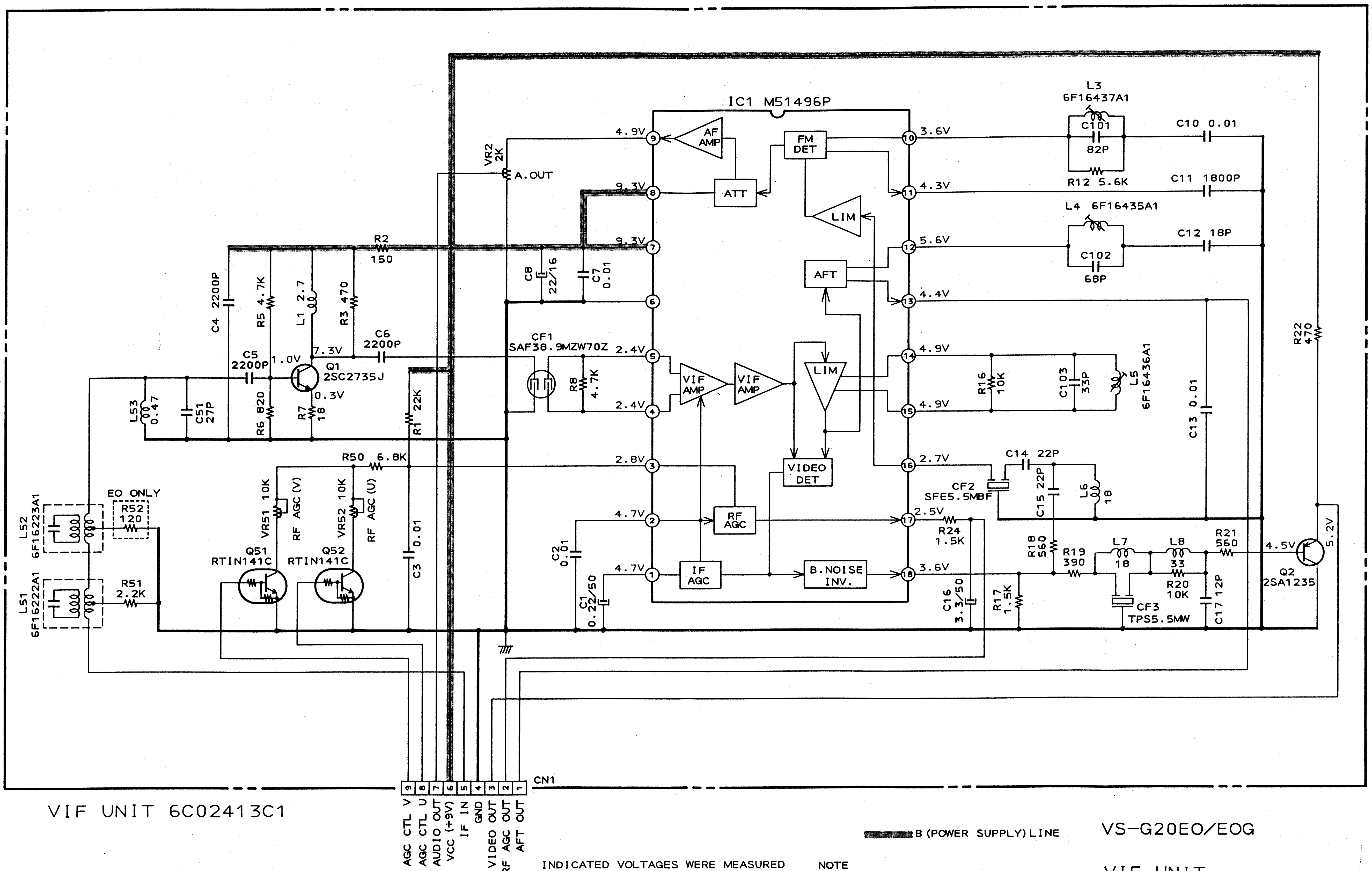

CHIP TRANSISTOR
COLLECTOR
BASE
EMITTER
C10
C101
C102
C103
R12
C12
R16
R50
R2
R3
R4
R8
R9
R20
R21
C6
C16
IC1
CF3
Q2
VR51

VIF UNIT (EK,EM,EOH)
6C02415C1


CHIP TRANSISTOR
COLLECTOR
BASE
EMITTER
C10
C101
C102
C103
R12
C12
R16
R50
R2
R5
R3
R8
R18
R19
R20
R21
R22
R51
R52
VR2
VR51
VR52
C6
C16
IC1
CF3
Q2
Q51
Q52
CN1

VIF UNIT (EO,EOG,EOG-V)
6C02413C1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

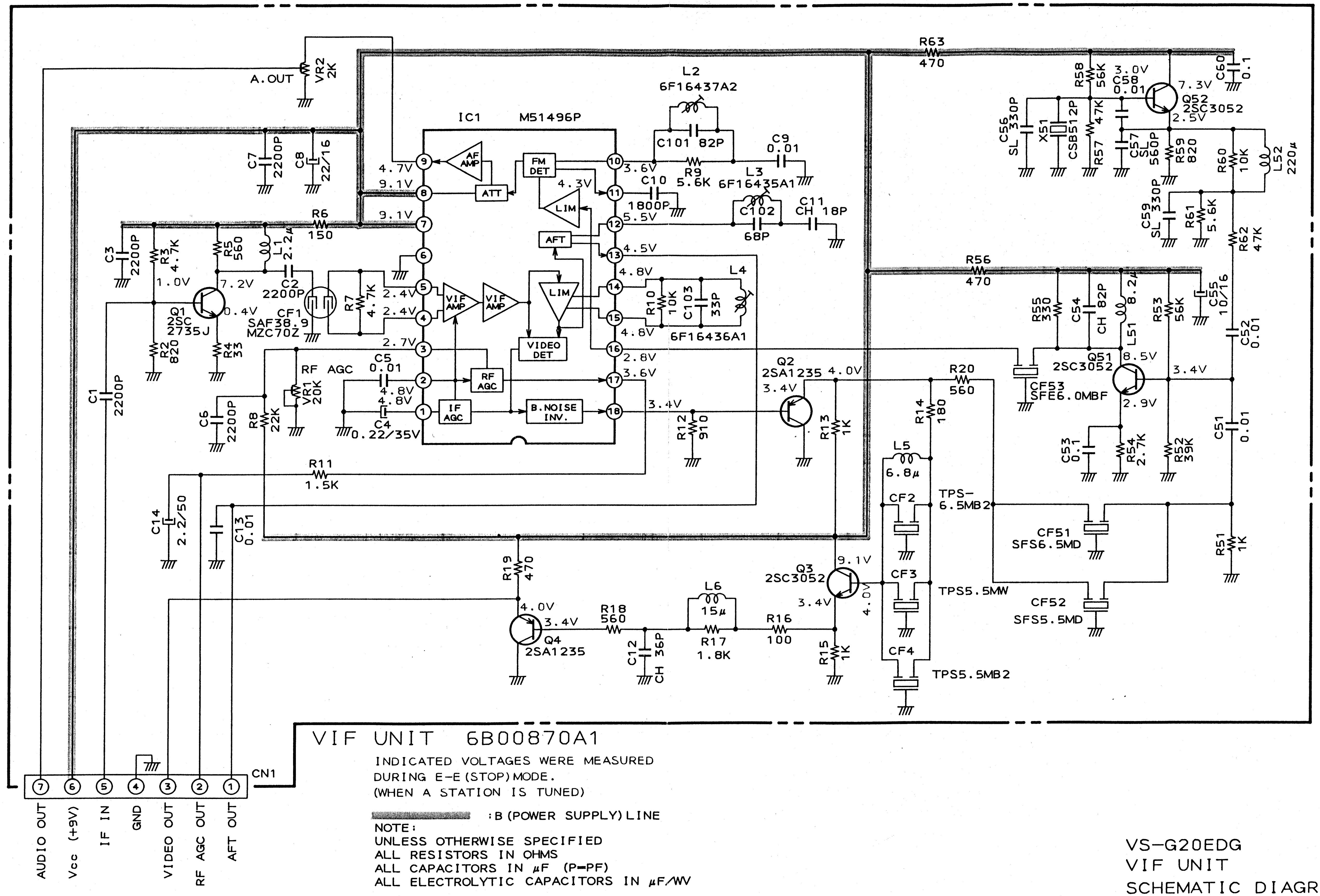

IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
4.9V
9.3V
9.3V
2.4V
2.4V
2.8V
4.7V
4.7V
3.6V
4.3V
5.6V
4.4V
4.9V
4.9V
2.7V
2.5V
3.6V
VR2 2K
A.OUT
R2 150
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
1.0V
7.3V
Q1 2SC2735J
0.3V
R6 820
R7 18
L53 0.47
C51 27P
C8 22/16
C7 0.01
CF1 SAF38.9MZW70Z
R8 4.7K
R1 22K
R50 6.8K
VR51 10K
RF AGC (V)
VR52 10K
RF AGC (U)
C3 0.01
Q51 RTIN141C
Q52 RTIN141C
EO ONLY
R52 120
L52 6F16223A1
R51 2.2K
L51 6F16222A1
C2 0.01
C1 0.22/50
L3 6F16437A1
C101 82P
R12 5.6K
C10 0.01
C11 1800P
L4 6F16435A1
C102 68P
C12 18P
R16 10K
C103 33P
L5 6F16436A1
C13 0.01
R22 470
C14 22P
CF2 SFE5.5MBF
C15 22P
L6 18
R24 1.5K
R18 560
R19 390
L7 18
L8 33
R20 10K
R21 560
4.5V
5.2V
Q2 2SA1235
C16 3.3/50
R17 1.5K
CF3 TPS5.5MW
C17 12P
CN1
9 AGC CTL V
8 AGC CTL U
7 AUDIO OUT
6 VCC (+9V)
5 IF IN
4 GND
3 VIDEO OUT
2 RF AGC OUT
1 AFT OUT
VIF UNIT 6C02413C1
B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION IS TUNED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH (K)

VS-G20EO/EOG

VIF UNIT
SCHEMATIC DIAGRAM
No.19-14 V116414M
A2


A B C D E F G H I J K
1 2 3 4 5 6 7 8
A.OUT
VR2 2K
IC1 M51496P
AF AMP
ATT
FM DET
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
4.7V
9.1V
9.1V
2.4V
2.4V
2.7V
4.8V
4.8V
3.6V
4.3V
5.5V
4.5V
4.8V
4.8V
2.8V
3.6V
3.4V
L2 6F16437A2
C101 82P
R9 5.6K
C9 0.01
C10 1800P
L3 6F16435A1
C102 68P
C11 CH 18P
R10 10K
C103 33P
L4 6F16436A1
C7 2200P
C8 22/16
R6 150
C3 2200P
R3 4.7K
R5 560
L1 2.2μ
C2 2200P
1.0V
7.2V
0.4V
Q1 2SC2735J
R2 820
R4 33
CF1 SAF38.9 MZC70Z
R7 4.7K
C1 2200P
RF AGC
C5 0.01
VR1 20K
C4 0.22/35V
C6 2200P
R8 22K
R11 1.5K
C14 2.2/50
C13 0.01
R12 910
Q2 2SA1235
4.0V
3.4V
R13 1K
R63 470
R58 56K
3.0V
C58 0.01
Q52 2SC3052
7.3V
2.5V
C60 0.1
C56 SL 330P
X51 CSB512P
R57 47K
C57 SL 560P
R59 820
R60 10K
L52 220μ
C59 SL 330P
R61 5.6K
R62 47K
R56 470
R55 330
C54 CH 82P
L51 8.2μ
R53 56K
C55 10/16
C52 0.01
Q51 2SC3052
8.5V
3.4V
2.9V
CF53 SFE6.0MBF
R20 560
R14 180
C53 0.1
R54 2.7K
R52 39K
C51 0.01
L5 6.8μ
CF2
TPS-6.5MB2
CF51 SFS6.5MD
R51 1K
CF3
TPS5.5MW
CF52 SFS5.5MD
CF4
TPS5.5MB2
Q3 2SC3052
9.1V
3.4V
4.0V
R19 470
4.0V
Q4 2SA1235
3.4V
R18 560
C12 CH 36P
L6 15μ
R17 1.8K
R16 100
R15 1K
CN1
⑦ ⑥ ⑤ ④ ③ ② ①
AUDIO OUT
Vcc (+9V)
IF IN
GND
VIDEO OUT
RF AGC OUT
AFT OUT

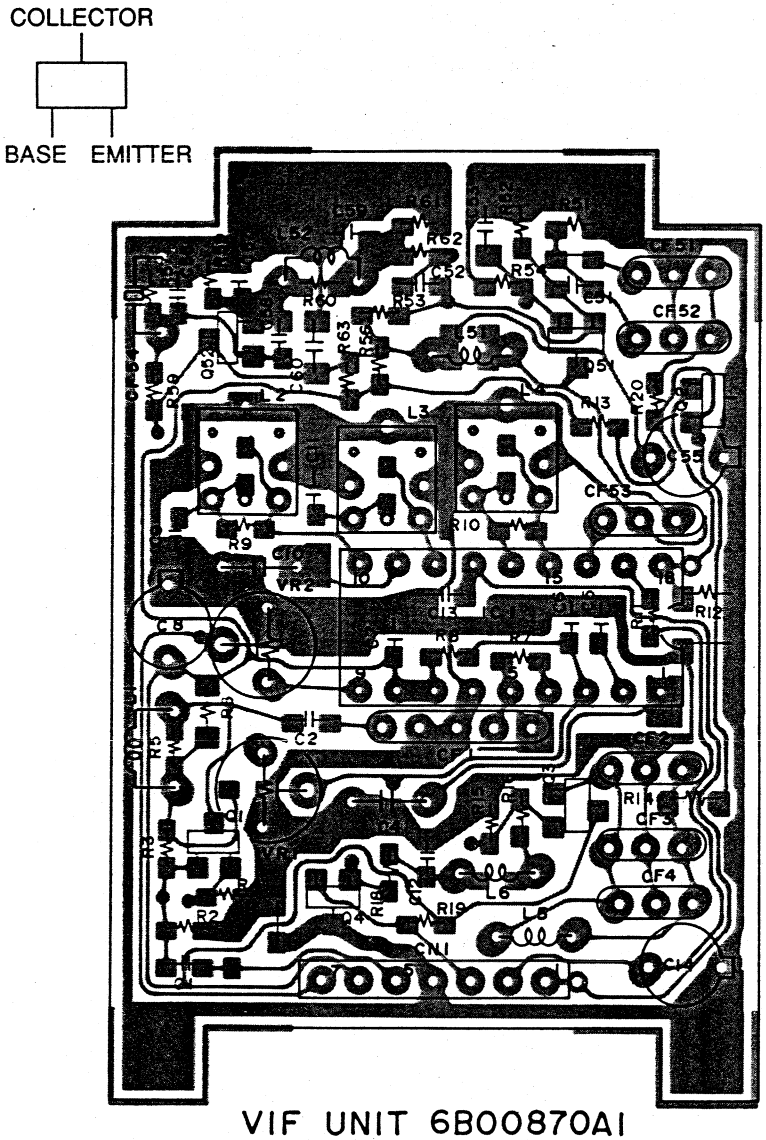
## VIF UNIT 6B00870A1

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION IS TUNED)

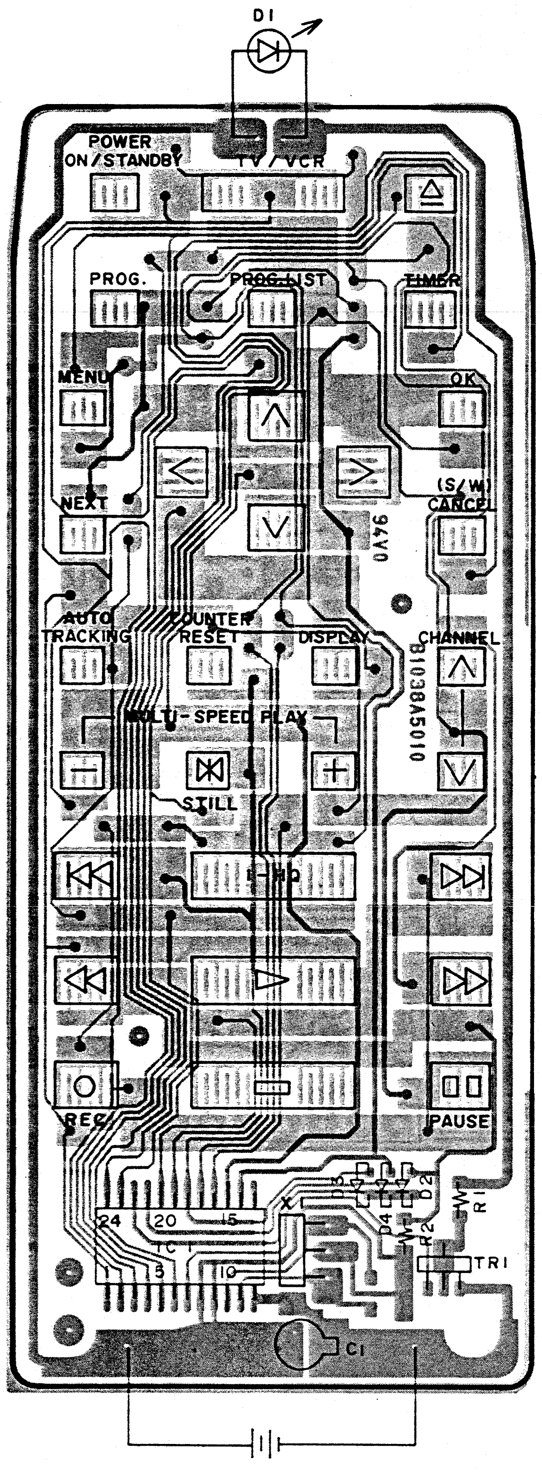
▨ : B (POWER SUPPLY) LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

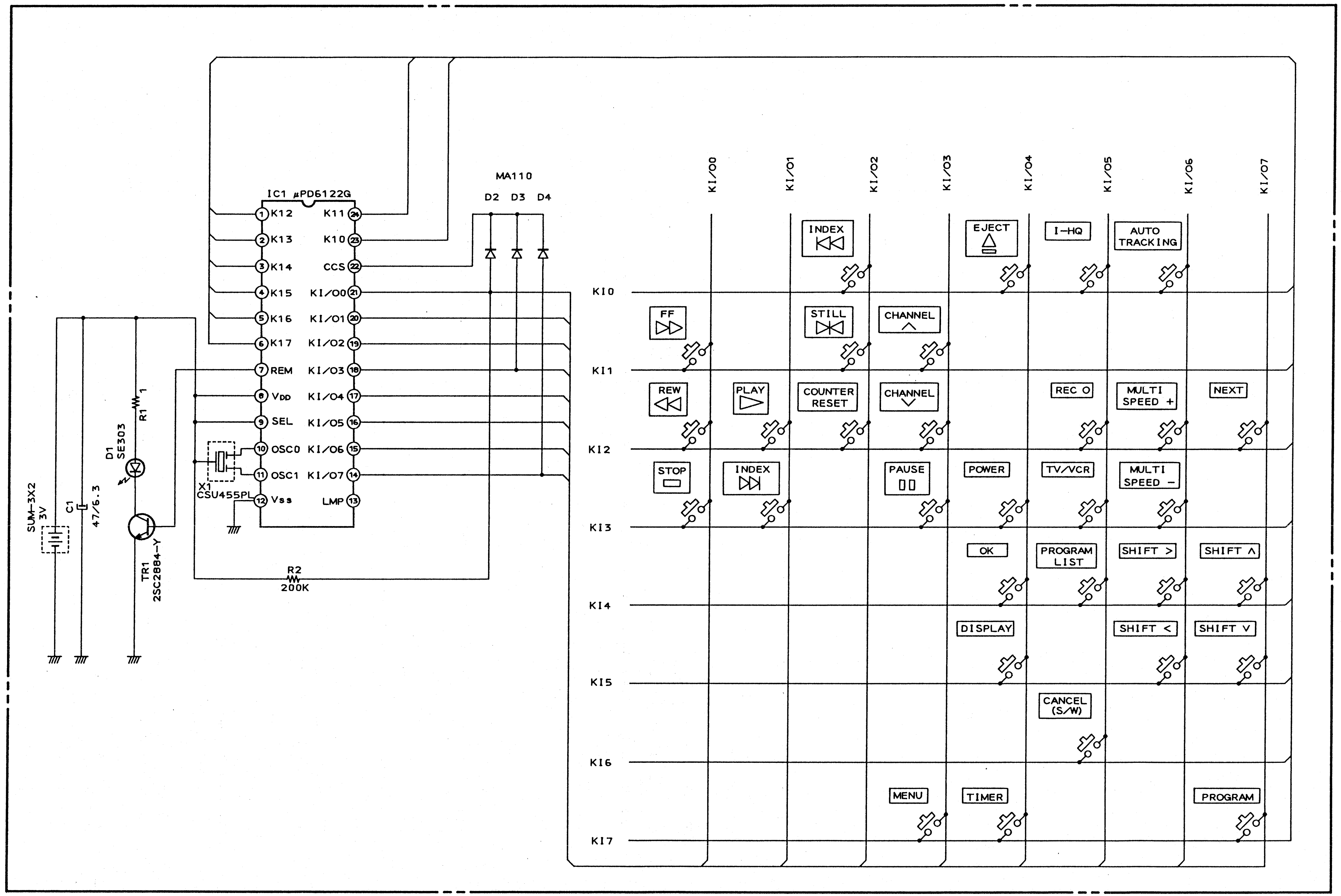
VS-G20EDG
VIF UNIT
SCHEMATIC DIAGRAM
No.19-15 V116415M A3


COLLECTOR
BASE
EMITTER
L52
R61
R62
C52
R53
R60
R63
R56
L51
Q51
Q52
R13
R20
R38
CF51
CF52
CF53
C55
L2
L3
R9
R10
C10
VR2
C8
C13
IC1
R6
R7
R12
C2
CF1
CF2
CF3
CF4
R14
R5
R3
R2
Q1
VR1
L4
L5
L6
R18
R19
C11
C14

VIF UNIT 6B00870A1
(EDG ONLY)


D1
POWER ON/STANDBY
TV/VCR
PROG.
PROG.LIST
TIMER
MENU
OK
NEXT
(S/W) CANCEL
94V0
AUTO TRACKING
COUNTER RESET
DISPLAY
CHANNEL
B1038A5010
MULTI-SPEED PLAY
STILL
E-HQ
REC
PAUSE
X
D3
D4
D2
R2
R1
TR1
24
20
15
IC 1
1
5
10
C1
1.5 x 2

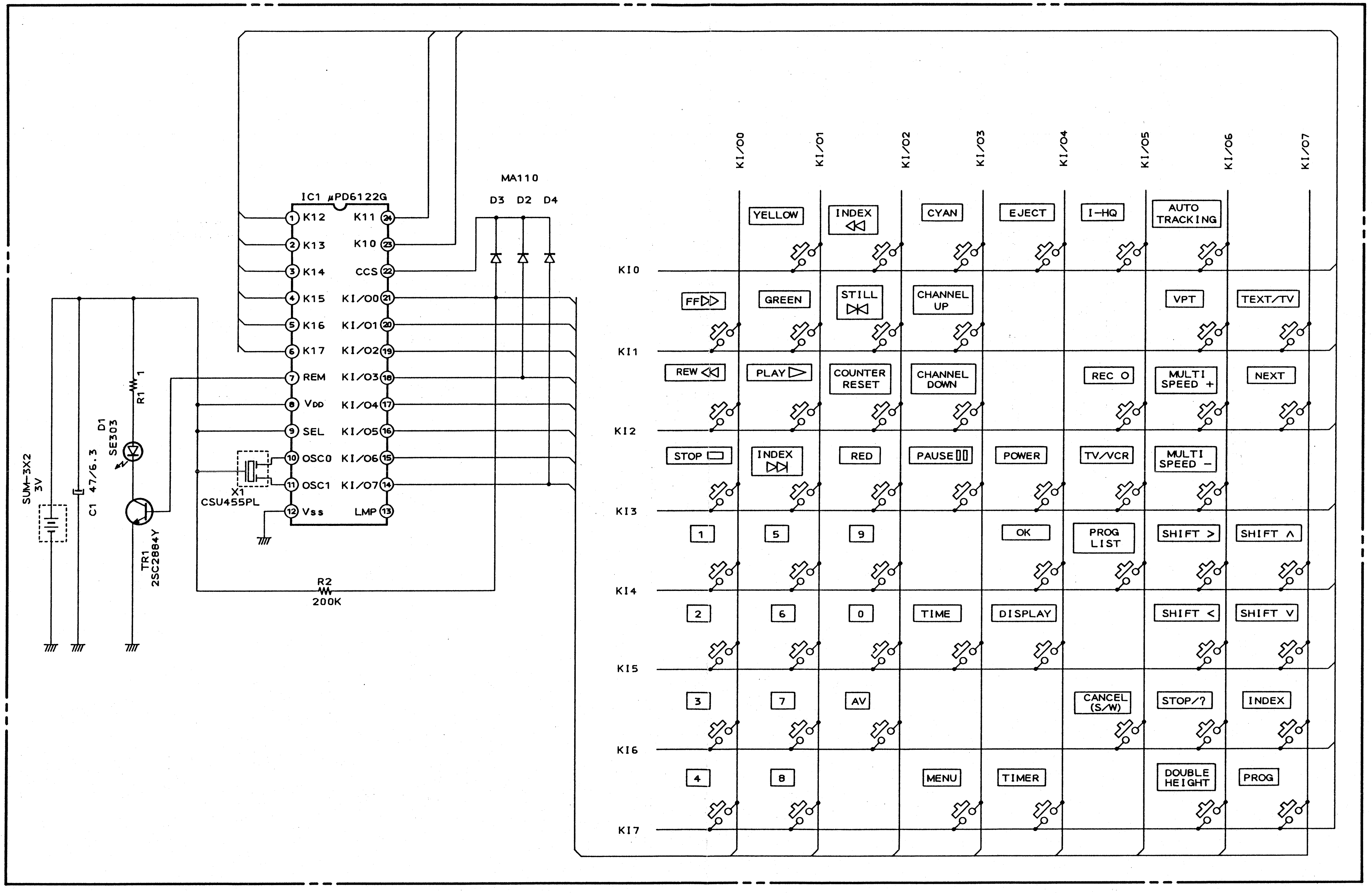
REMO-CON PCB B1038A5010


IC1 μPD6122G
K12
K13
K14
K15
K16
K17
REM
VDD
SEL
OSC0
OSC1
Vss
K11
K10
CCS
KI/O0
KI/O1
KI/O2
KI/O3
KI/O4
KI/O5
KI/O6
KI/O7
LMP
MA110
D2 D3 D4
R1 1
D1 SE303
TR1 2SC2884-Y
SUM-3X2 3V
C1 47/6.3
X1 CSU455PL
R2 200K
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
INDEX
EJECT
I-HQ
AUTO TRACKING
FF
STILL
CHANNEL
REW
PLAY
COUNTER RESET
CHANNEL
REC O
MULTI SPEED +
NEXT
STOP
INDEX
PAUSE
POWER
TV/VCR
MULTI SPEED -
OK
PROGRAM LIST
SHIFT >
SHIFT Λ
DISPLAY
SHIFT <
SHIFT V
CANCEL (S/W)
MENU
TIMER
PROGRAM

REMO-CON PCB B1038A5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF

RC-V250E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.19-16 B103801M
A2

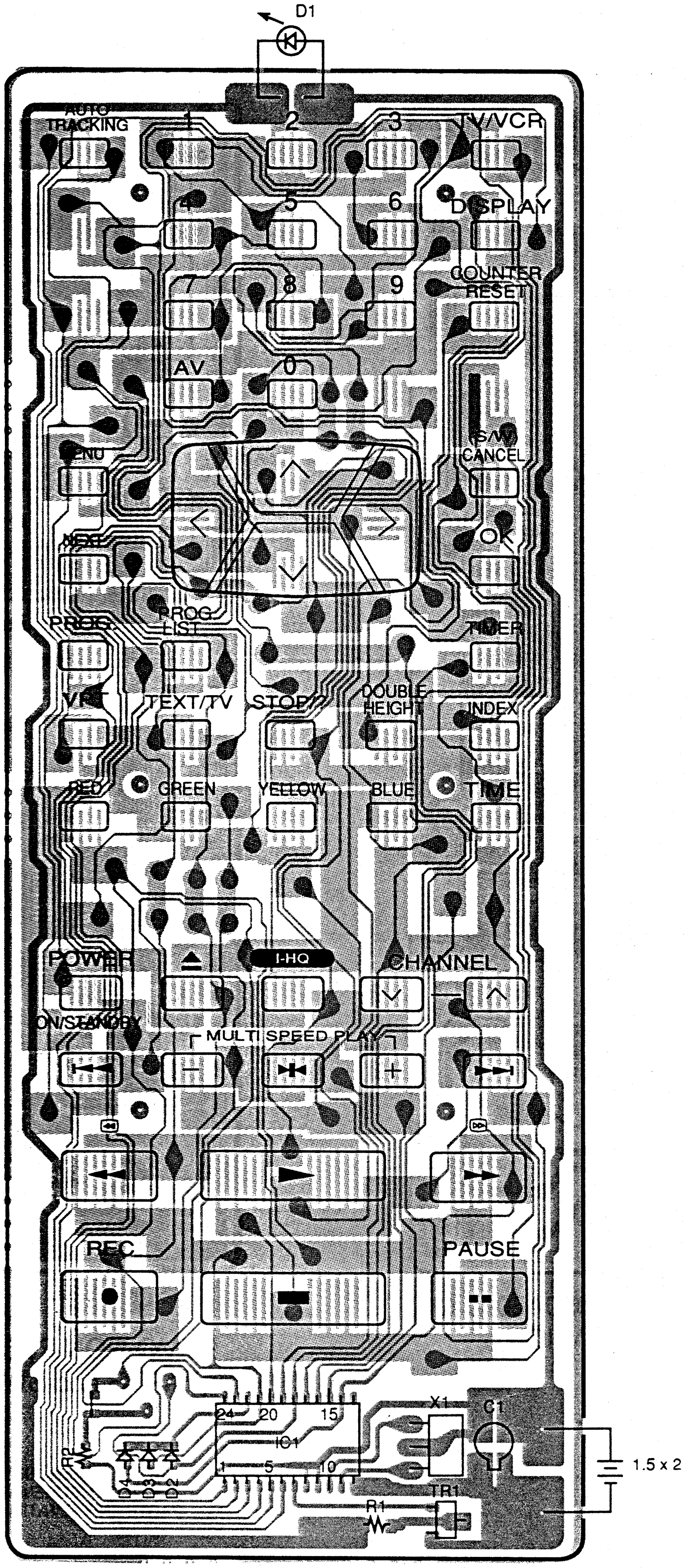

IC1 μPD6122G
K12
K13
K14
K15
K16
K17
REM
VDD
SEL
OSC0
OSC1
Vss
K11
K10
CCS
KI/O0
KI/O1
KI/O2
KI/O3
KI/O4
KI/O5
KI/O6
KI/O7
LMP
MA110
D3 D2 D4
SUM-3X2
3V
C1 47/6.3
D1
SE303
R1 1
TR1
2SC2884Y
X1
CSU455PL
R2
200K
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
YELLOW
INDEX
CYAN
EJECT
I-HQ
AUTO TRACKING
FF
GREEN
STILL
CHANNEL UP
VPT
TEXT/TV
REW
PLAY
COUNTER RESET
CHANNEL DOWN
REC O
MULTI SPEED +
NEXT
STOP
INDEX
RED
PAUSE
POWER
TV/VCR
MULTI SPEED −
1
5
9
OK
PROG LIST
SHIFT >
SHIFT Λ
2
6
0
TIME
DISPLAY
SHIFT <
SHIFT V
3
7
AV
CANCEL (S/W)
STOP/?
INDEX
4
8
MENU
TIMER
DOUBLE HEIGHT
PROG

REMO-CON PCB B1051A5010

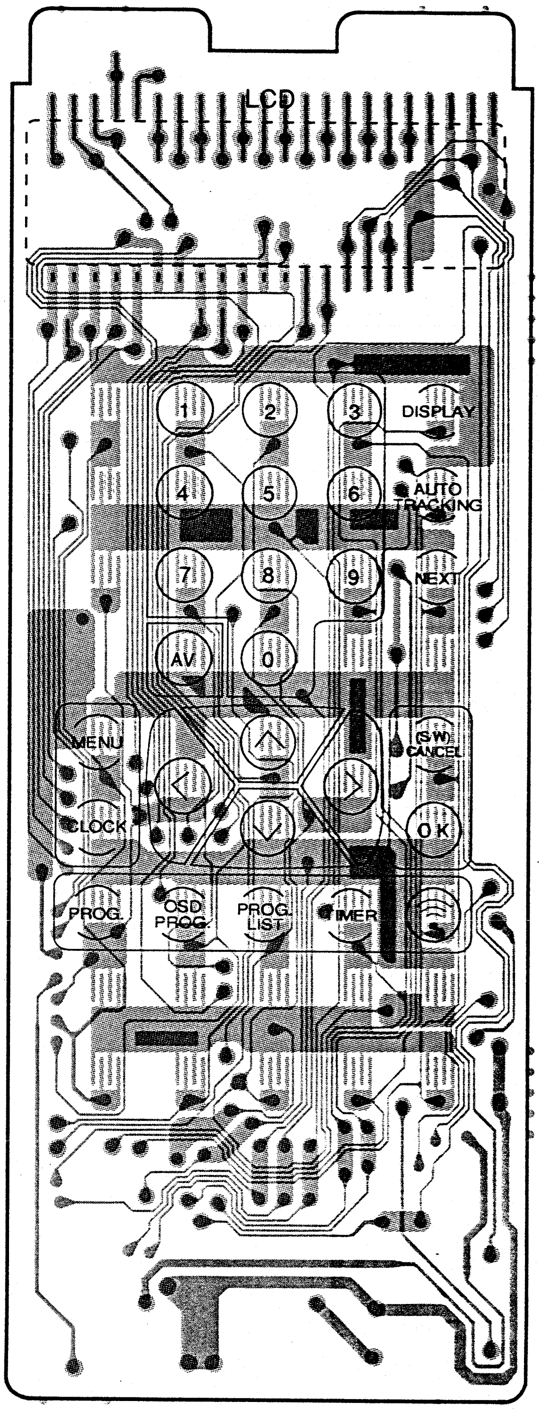
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)

RC-W201G
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM

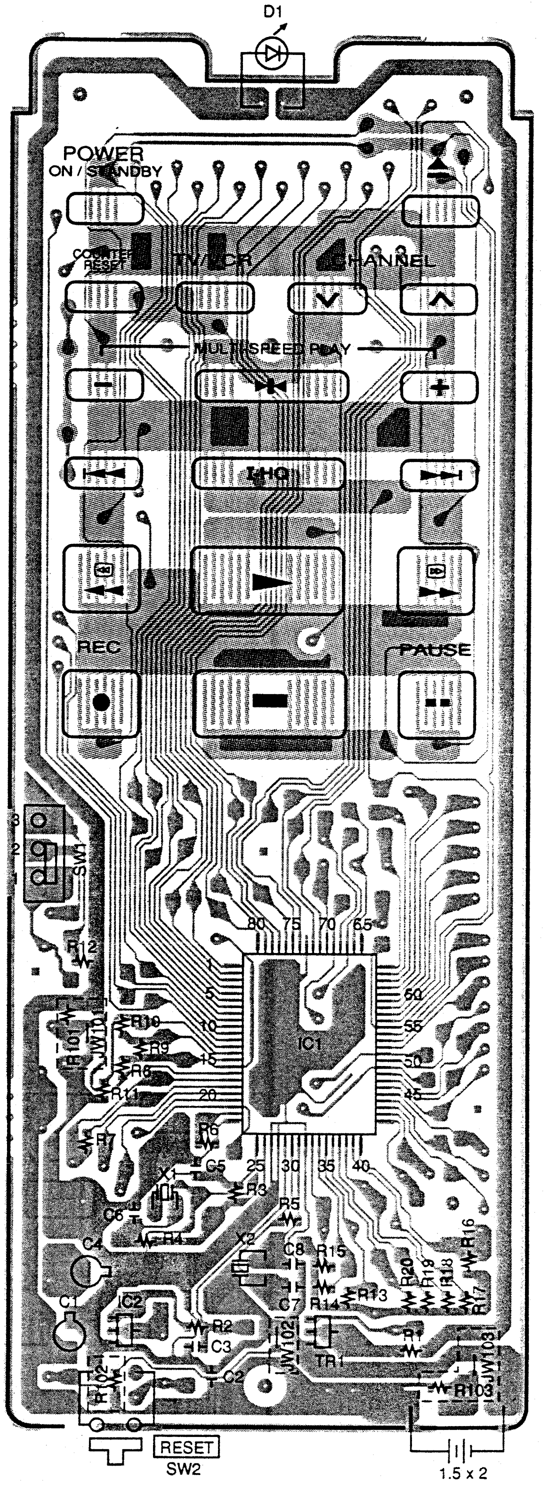
No.19-17 B105101M
A2


D1
AUTO TRACKING
1
2
3
TV/VCR
4
5
6
DISPLAY
7
8
9
COUNTER RESET
AV
0
MENU
(S/W) CANCEL
NEXT
OK
PROG.
PROG. LIST
TIMER
VPS
TEXT/TV
STOP/?
DOUBLE HEIGHT
INDEX
RED
GREEN
YELLOW
BLUE
TIME
POWER
I-HQ
CHANNEL
ON/STANDBY
MULTI SPEED PLAY
REC
PAUSE
X1
C1
24
20
15
IC1
1
5
10
R2
D4
D3
D2
R1
TR1
1.5 x 2

REMO-CON PCB B1051A5010

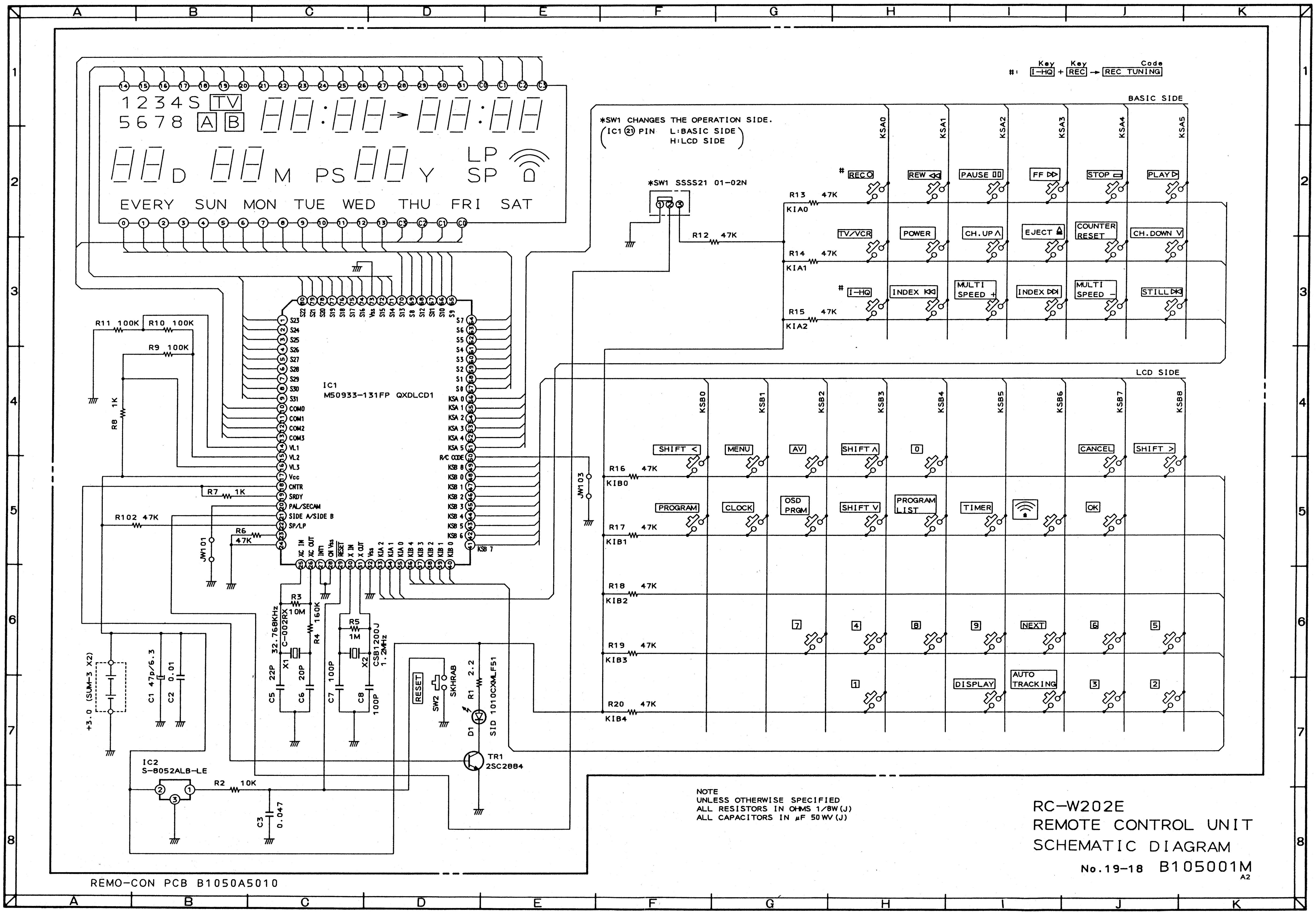

LCD
1
2
3
DISPLAY
4
5
6
AUTO TRACKING
7
8
9
NEXT
AV
0
MENU
(SW) CANCEL
CLOCK
OK
PROG.
OSD PROG.
PROG. LIST
TIMER

REMO-CON PCB B1050A5010 (J1)
(SWITCH LOCATION)


D1
POWER
ON / STANDBY
COUNTER RESET
TV/VCR
CHANNEL
MULTI SPEED PLAY
I-HQ
REC
PAUSE
3
2
1
SW1
IC1
80
75
70
65
1
5
10
15
20
60
55
50
45
25
30
35
40
R12
R101
JW101
R10
R9
R8
R11
R7
R6
X1
C5
R3
C6
R4
R5
C4
X2
C8
R15
C7
R14
R13
R20
R19
R18
R16
R17
C1
IC2
R2
C3
JW102
R1
TR1
JW103
R102
C2
R103
RESET
SW2
1.5 x 2

REMO-CON PCB B1050A5010 (J1)
(PARTS and SWITCH LOCATION)

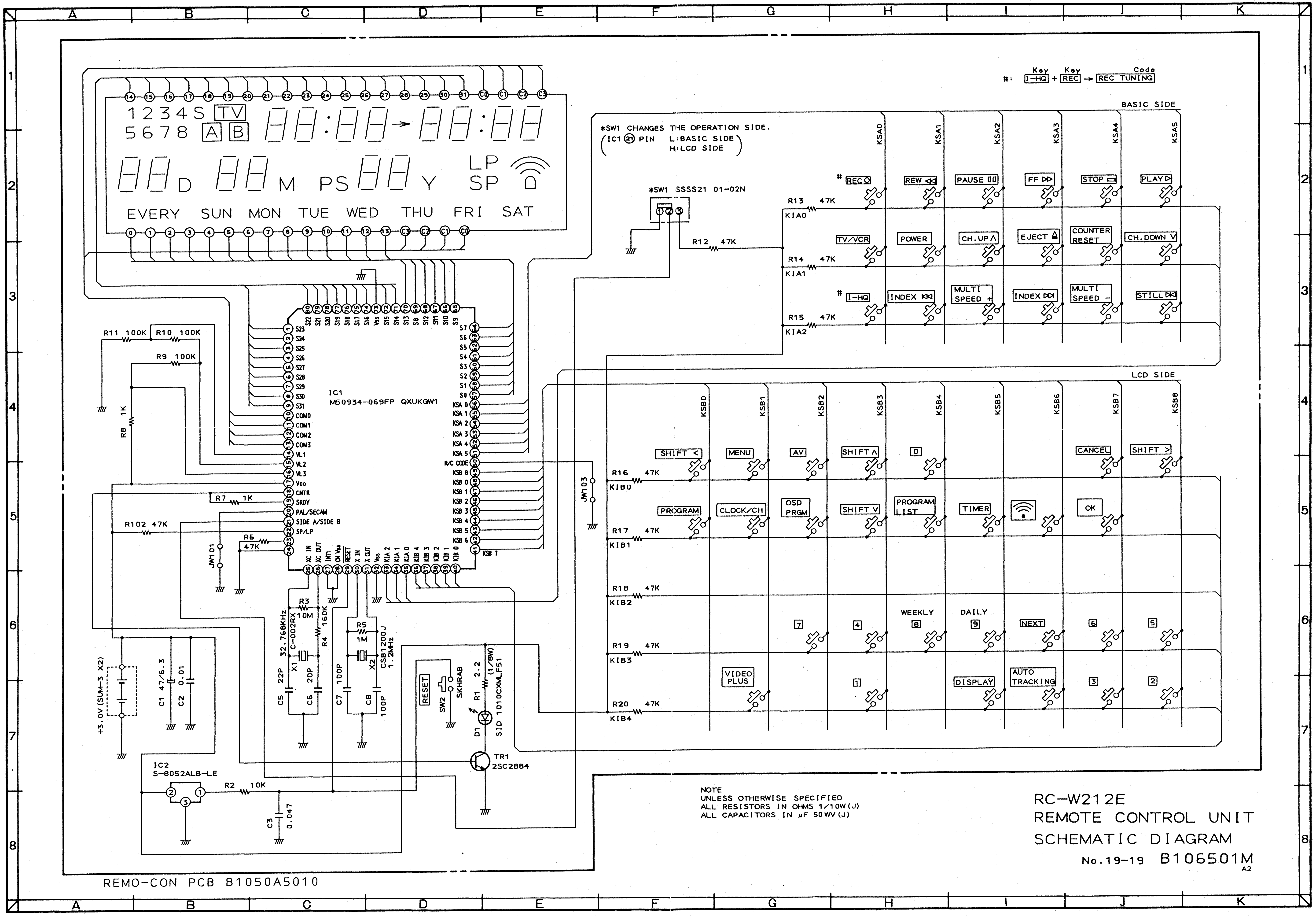
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


#: Key I-HQ + Key REC → Code REC TUNING
BASIC SIDE
*SW1 CHANGES THE OPERATION SIDE.
(IC1 ㉑ PIN L:BASIC SIDE H:LCD SIDE)
*SW1 SSSS21 01-02N
KSA0
KSA1
KSA2
KSA3
KSA4
KSA5
# RECO
REW ◁◁
PAUSE ▯▯
FF ▷▷
STOP
PLAY ▷
TV/VCR
POWER
CH.UP∧
EJECT
COUNTER RESET
CH.DOWN ∨
# I-HQ
INDEX ◁◁
MULTI SPEED +
INDEX ▷▷
MULTI SPEED −
STILL ▷◁
R13 47K
KIA0
R12 47K
R14 47K
KIA1
R15 47K
KIA2
LCD SIDE
KSB0
KSB1
KSB2
KSB3
KSB4
KSB5
KSB6
KSB7
KSB8
SHIFT <
MENU
AV
SHIFT ∧
0
CANCEL
SHIFT >
PROGRAM
CLOCK
OSD PRGM
SHIFT ∨
PROGRAM LIST
TIMER
OK
7
4
8
9
NEXT
6
5
1
DISPLAY
AUTO TRACKING
3
2
R16 47K
KIB0
R17 47K
KIB1
R18 47K
KIB2
R19 47K
KIB3
R20 47K
KIB4
JW103
1234S TV 5678 A B
D M PS Y LP SP
EVERY SUN MON TUE WED THU FRI SAT
IC1
M50933-131FP QXDLCD1
R11 100K
R10 100K
R9 100K
R8 1K
R7 1K
R102 47K
R6 47K
JW101
R3 10M
R4 160K
32.768KHz C-002RX X1
C5 22P
C6 20P
C7 100P
R5 1M
X2 CSB1200J 1.2MHz
C8 100P
RESET
SW2 SKHRAB
R1 2.2
D1 SID 1010CXMLF51
TR1 2SC2884
+3.0 (SUM-3 X2)
C1 47μ/6.3
C2 0.01
IC2 S-8052ALB-LE
R2 10K
C3 0.047
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (J)

RC-W202E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.19-18 B105001M
A2

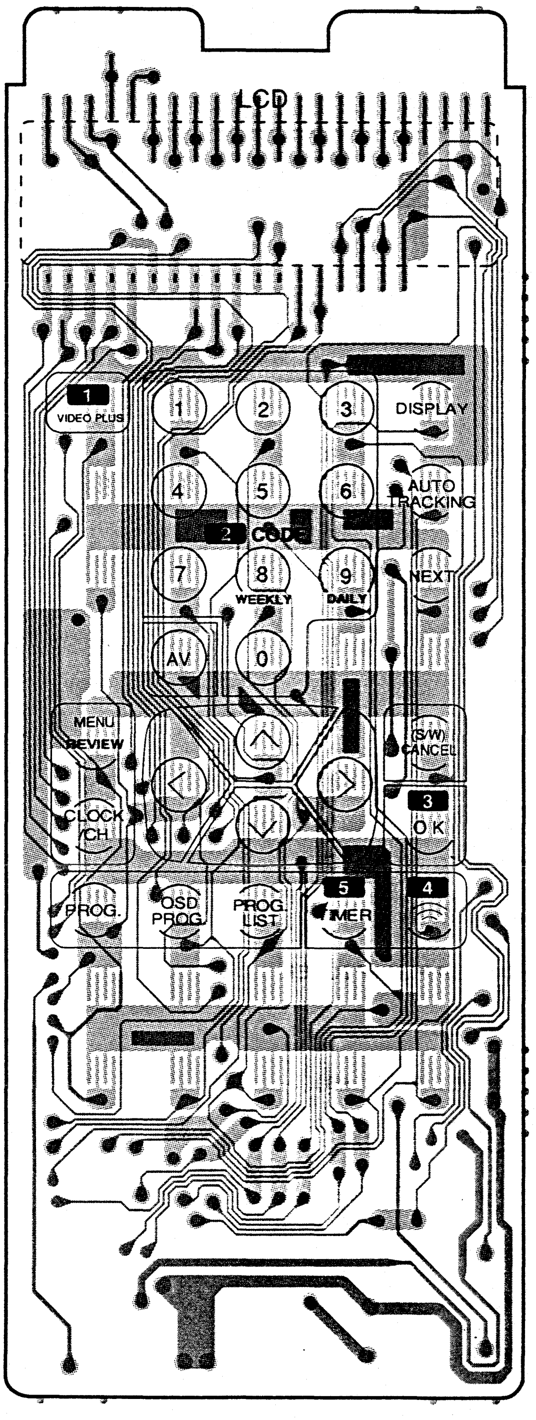
REMO-CON PCB B1050A5010


#: Key I-HQ + Key REC → Code REC TUNING
BASIC SIDE
*SW1 CHANGES THE OPERATION SIDE.
(IC1 ㉑ PIN L:BASIC SIDE
H:LCD SIDE)
*SW1 SSSS21 01-02N
R12 47K
R13 47K
KIA0
R14 47K
KIA1
R15 47K
KIA2
KSA0
KSA1
KSA2
KSA3
KSA4
KSA5
# REC
REW
PAUSE
FF
STOP
PLAY
TV/VCR
POWER
CH.UP
EJECT
COUNTER RESET
CH.DOWN
# I-HQ
INDEX
MULTI SPEED +
INDEX
MULTI SPEED −
STILL
LCD SIDE
KSB0
KSB1
KSB2
KSB3
KSB4
KSB5
KSB6
KSB7
KSB8
SHIFT <
MENU
AV
SHIFT ∧
0
CANCEL
SHIFT >
PROGRAM
CLOCK/CH
OSD PRGM
SHIFT V
PROGRAM LIST
TIMER
OK
R16 47K
KIB0
R17 47K
KIB1
R18 47K
KIB2
R19 47K
KIB3
R20 47K
KIB4
WEEKLY
DAILY
7
4
8
9
NEXT
6
5
VIDEO PLUS
1
DISPLAY
AUTO TRACKING
3
2
JW103
1 2 3 4 S TV
5 6 7 8 A B
D M PS Y LP SP
EVERY SUN MON TUE WED THU FRI SAT
IC1
M50934-069FP QXUKGW1
R11 100K
R10 100K
R9 100K
R8 1K
R7 1K
R102 47K
R6 47K
JW101
S23 S24 S25 S26 S27 S28 S29 S30 S31 COM0 COM1 COM2 COM3 VL1 VL2 VL3 Vcc CNTR SRDY PAL/SECAM SIDE A/SIDE B SP/LP
S22 S21 S20 S19 S18 S17 S16 Vss S15 S14 S13 S8 S12 S11 S10 S9
S7 S6 S5 S4 S3 S2 S1 S0 KSA 0 KSA 1 KSA 2 KSA 3 KSA 4 KSA 5 R/C CODE KSB 8 KSB 0 KSB 1 KSB 2 KSB 3 KSB 4 KSB 5 KSB 6 KSB 7
XC IN XC OUT INT1 ON Vss RESET X IN X OUT Vss KIA 2 KIA 1 KIA 0 KIB 4 KIB 3 KIB 2 KIB 1 KIB 0
R3 10M
R4 160K
32.768KHz C-002RX X1
C5 22P
C6 20P
R5 1M
C7 100P
C8 100P
X2 CSB1200J 1.2MHz
RESET
SW2 SKHRAB
R1 2.2 (1/8W)
D1 SID 1010CXMLF51
TR1 2SC2884
+3.0V (SUM-3 X2)
C1 47/6.3
C2 0.01
IC2 S-8052ALB-LE
R2 10K
C3 0.047
A B C D E F G H I J K
1 2 3 4 5 6 7 8

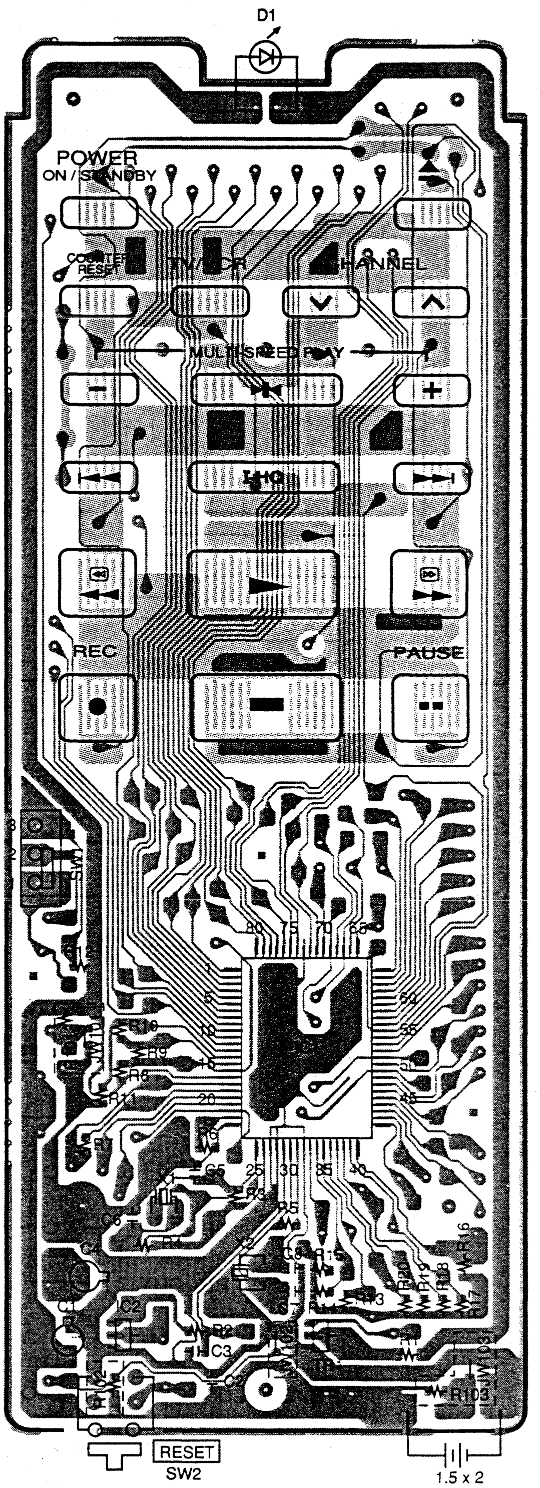
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN µF 50WV (J)

RC-W212E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.19-19 B106501M
A2

REMO-CON PCB B1050A5010


LCD
1
VIDEO PLUS
1
2
3
DISPLAY
4
5
6
AUTO TRACKING
2
CODE
7
8
9
NEXT
WEEKLY
DAILY
AV
0
MENU REVIEW
(S/W) CANCEL
CLOCK /CH
3
OK
PROG.
OSD PROG.
PROG. LIST
5
TIMER
4

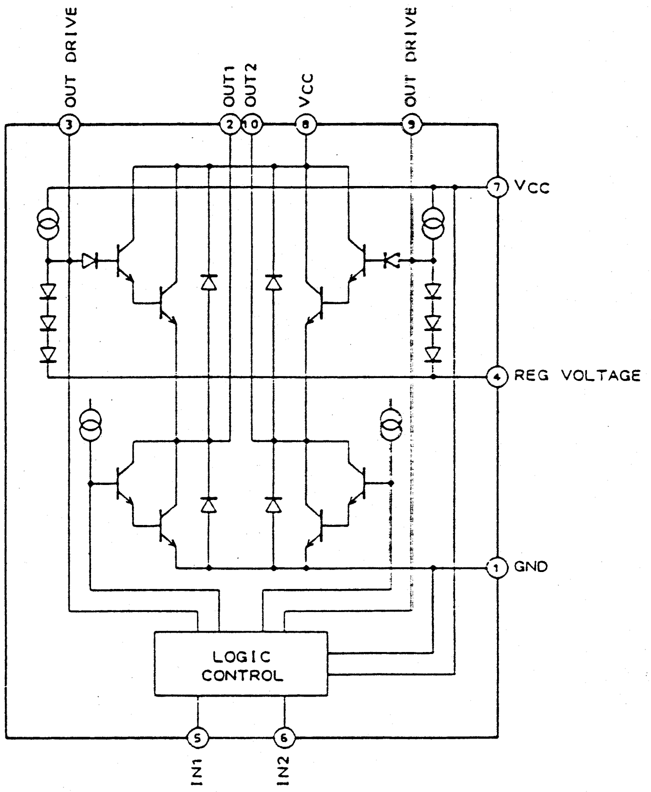
REMO-CON PCB B1050A5010 (J1)
(SWITCH LOCATION)


D1
POWER
ON / STANDBY
COUNTER RESET
TV/VCR
CHANNEL
MULTI-SPEED PLAY
−
+
IHQ
REC
PAUSE
80
75
70
65
1
5
10
15
20
25
30
35
40
45
50
55
60
R10
R9
R8
R11
R6
R7
C5
R3
R5
C6
R4
C4
C1
IC2
R2
C3
C2
R13
R16
R17
R18
R19
R20
R1
R103
SW1
RESET
SW2
1.5 x 2

REMO-CON PCB B1050A5010 (J1)
(PARTS and SWITCH LOCATION)

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

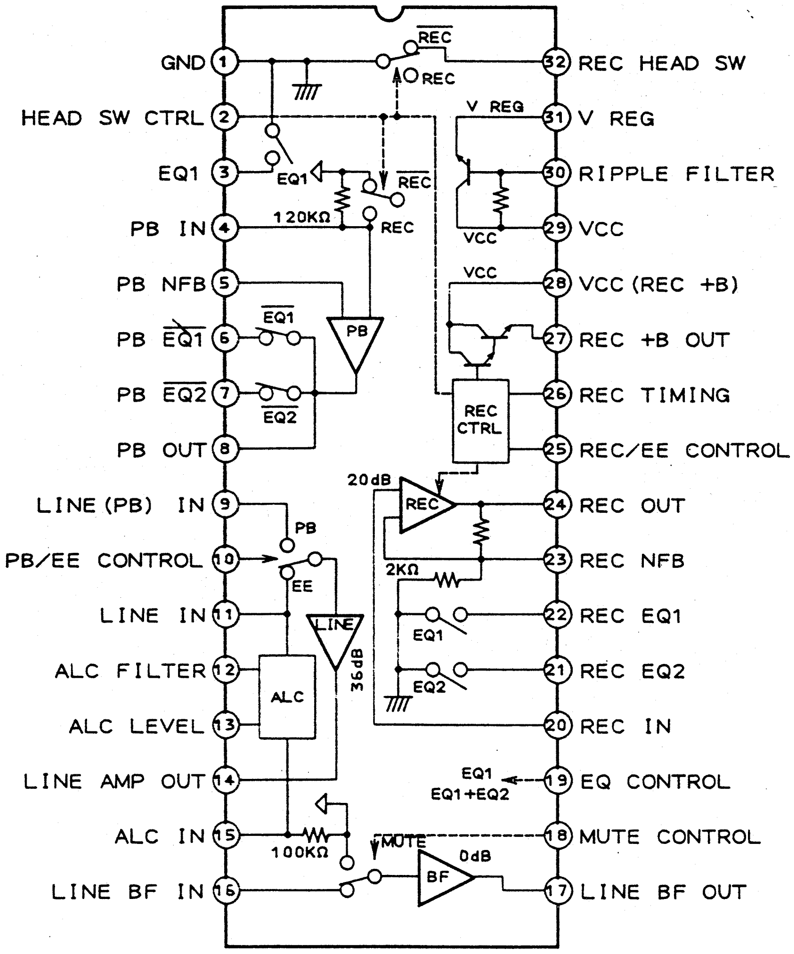
## BA6229 (BI-DIRECTIONAL MOTOR DRIVE)



OUT DRIVE
OUT1
OUT2
VCC
OUT DRIVE
3
2
10
8
9
7 Vcc
4 REG VOLTAGE
1 GND
LOGIC CONTROL
5
6
IN1
IN2

| INPUT | | OUTPUT | | MODE |
|---|---|---|---|---|
| ⑤ | ⑥ | ② | ⑩ | |
| H | H | L | L | BRAKE |
| L | H | L | H | CASSETTE & TAPE LOADING |
| H | L | H | L | CASSETTE & TAPE UNLOADING |
| L | L | OPEN | OPEN | STOP |

## BA7765AS (AUDIO SIGNAL REC/PB AMPLIFIER)



GND 1
HEAD SW CTRL 2
EQ1 3
PB IN 4
PB NFB 5
PB EQ1 6
PB EQ2 7
PB OUT 8
LINE (PB) IN 9
PB/EE CONTROL 10
LINE IN 11
ALC FILTER 12
ALC LEVEL 13
LINE AMP OUT 14
ALC IN 15
LINE BF IN 16
32 REC HEAD SW
31 V REG
30 RIPPLE FILTER
29 VCC
28 VCC (REC +B)
27 REC +B OUT
26 REC TIMING
25 REC/EE CONTROL
24 REC OUT
23 REC NFB
22 REC EQ1
21 REC EQ2
20 REC IN
19 EQ CONTROL
18 MUTE CONTROL
17 LINE BF OUT
REC
REC
V REG
EQ1
REC
120KΩ
REC
VCC
VCC
EQ1
PB
EQ2
REC CTRL
20dB
REC
PB
EE
2KΩ
LINE
36dB
EQ1
EQ2
ALC
EQ1
EQ1+EQ2
MUTE
100KΩ
0dB
BF

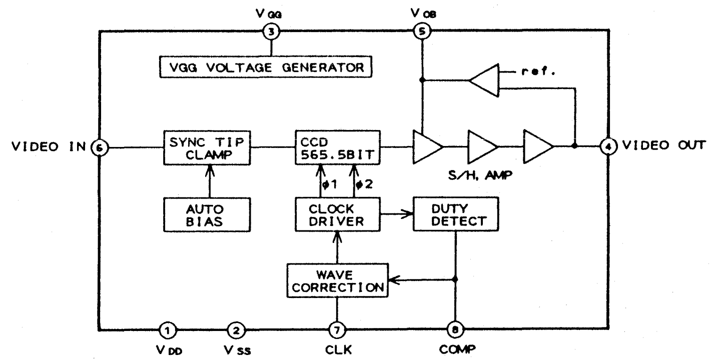
## CF72307 (TELETEXT DECODER)

| PIN No. | PORT NAME | I/O | FUNCTION |
|---|---|---|---|
| 1 | FIELD | O | Programmable output polarity of a 25 Hz output signal synchronized either with CSYNC or SLVHVSYNC input field sync pulses to produce a non-interlaced display. |
| 2 | DCSYNC | O | Digital composite sync output. |
| 3 | CSYNCIN | I | Active low composite sync. |
| 4 | TACW | I | Teletext aquisition window. |
| 5 | TUM | I | Test pin. (Must be grounded in normal application.) |
| 6 | OSCOUT | O | 13.875 MHz crystal oscillator output. |
| 7 | OSCIN | I | 13.875 MHz crystal oscillator input. (OSCIN must be grounded if the 13.875 MHz clock of the dataslicer is connected to CLKIN.) |
| 8 | DVCC1 | I | Power supply for digital logic. (5 V ± 5 %) |
| 9 | CLKIN | I | 13.875 MHz system clock input for digital logic. |
| 10 | DGND2 | – | Ground terminal for digital logic. |
| 11 | TDATA | I | Teletext data from dataslicer. |
| 12 | TCLOCK | I | Teletext clock from dataslicer. |
| 13 | DGND1 | – | Ground terminal for digital logic. |
| 14 | AVCC1 | I | Power supply for analogue logic. (5 V ± 5 %) |
| 15 | BLANK | O | Picture blanking signal (active high). |
| 16 | BLUE | O | Blue output (active high). |
| 17 | AGND1 | – | Ground terminal for analogue logic. |
| 18 | GREEN | O | Green output (active high). |
| 19 | AGND2 | – | Ground terminal for analogue logic. |
| 20 | RED | O | Red output (active high). |
| 21 | AGND3 | – | Ground terminal for analogue logic. |
| 22 | RGBSET | I/O | A current, determind by a resistor defines the output high level on the RGB pins. |
| 23 | REF | I/O | Reference voltage output for the RGB output drivers. |
| 24 | AVCC2 | I | Power supply for analogue logic. (5 V ± 5 %) |
| 25 | VIDEOIN | I | Composite video signal input. |
| 26 | ACSYNC | O | Analogue output of sync switch. |
| 27 | TEST | I | Test pin. (Must be grounded in normal application.) |
| 28 | BIAS | I | Bias definition pin. (BIAS should be grounded if the on chip oscillator is not used.) |
| 29 | $\overline{\text{RESET}}$ | I | Power on reset signal input (active low). |
| 30 | TRC | I | Test pin. (Must be grounded in normal application.) |
| 31 | TGST | | |
| 32 | TGMT | | |
| 33 | SLVHSYNC | I | Programmable active low or high H-sync input. (In slave sync mode, it locks the horizontal display timing to this signal.) |
| 34 | SLVHVSYNC | I | Programmable active low or high V-sync input. (In slave sync mode, it locks the vertical display timing to this signal.) |
| 35 | PWRDWN | I | Power down the IC in test mode.(Should be grounded in normal application.) |
| 36 | SDA | I/O | I²C-bus serial data. |
| 37 | SCL | I/O | I²C-bus serial data clock. |
| 38 | C1 | I | Test pin. (Must be connected to +5 V in normal application.) |
| 39 | CO | I | |
| 50 | A0 | O | DRAM row and column address. |
| 46 | A1 | | |
| 43 | A2 | | |
| 41 | A3 | | |
| 40 | A4 | | |
| 42 | A5 | | |
| 45 | A6 | | |
| 48 | A7 | | |
| 51 | A8 | | |
| 54 | A9 | | |
| 44 | DVCC2 | I | Power supply for digital logic. (5 V ± 5 %) |
| 47 | DGND3 | – | Ground terminal for digital logic. |
| 49 | DGND4 | – | |
| 52 | VDD32 | O | Output terminal of the 3.2 V power supply. |
| 53 | DVCC3 | I | Power supply for digital logic. (5 V ± 5 %) |
| 55 | $\overline{\text{G}}$ | O | DRAM output (active low). |
| 56 | $\overline{\text{RAS0}}$ | O | DRAM row address strobe output. |
| 57 | $\overline{\text{CAS0}}$ | O | DRAM column address strobe output. |
| 58 | $\overline{\text{W}}$ | O | DRAM write command (active low). |
| 62 | D0 | I/O | DRAM data. |
| 60 | D1 | | |
| 59 | D2 | | |
| 61 | D3 | | |
| 63 | $\overline{\text{RAS1}}$ | O | DRAM row address strobe for memory bank zero. |
| 64 | $\overline{\text{CAS1}}$ | O | DRAM column address strobe for memory bank one. |

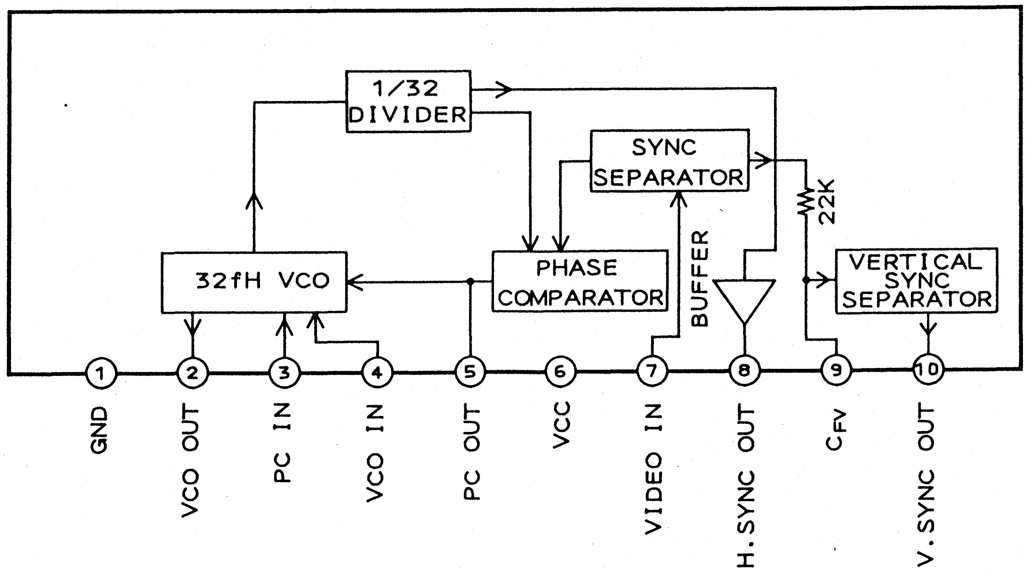
## CF72306 (TELETEXT DATA SLICER)

| PIN No. | PORT NAME | I/O | FUNCTION |
|---|---|---|---|
| 1 | TSIG | I | Video sync input 1 |
| 2 | SSIG | I | Video sync input 2 |
| 3 | CSIG | I | Video data input |
| 4 | AGND1 | – | Analogue ground |
| 5 | OSC1 | I | 13.875 MHz oscillator |
| 6 | OSC2 | I | 13.875 MHz oscillator |
| 7 | AVCC | – | Analogue Vcc |
| 8 | CREF | I | Video data reference input |
| 9 | AGND2 | – | Analogue ground |
| 10 | BIAS | I | Internal reference |
| 11 | TSTAPLB | I | Test/Application |
| 12 | TCLK | O | Teletext clock |
| 13 | TDATA | O | Teletext data |
| 14 | DGND2 | – | Digital ground |
| 15 | OSCOUT | O | Oscillator output |
| 16 | DVCC | – | Digital Vcc |
| 17 | WIND | I | Timing signal |
| 18 | DGND1 | – | Digital ground |
| 19 | SYNC | O | Separated sync output |
| 20 | SCANOUT | O | Test scan output |

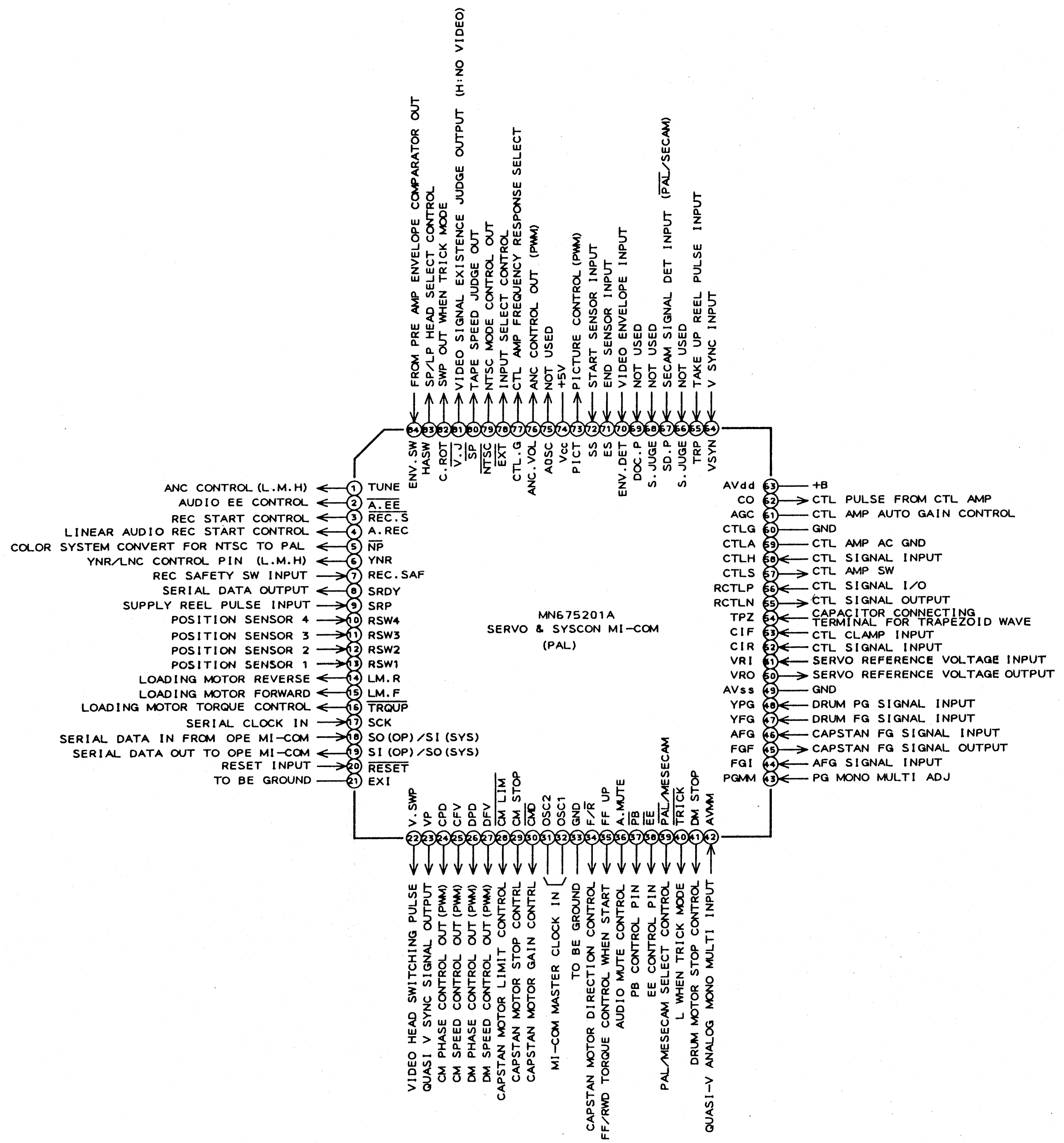
## LC8992 (CCD 1H DELAY LINE)



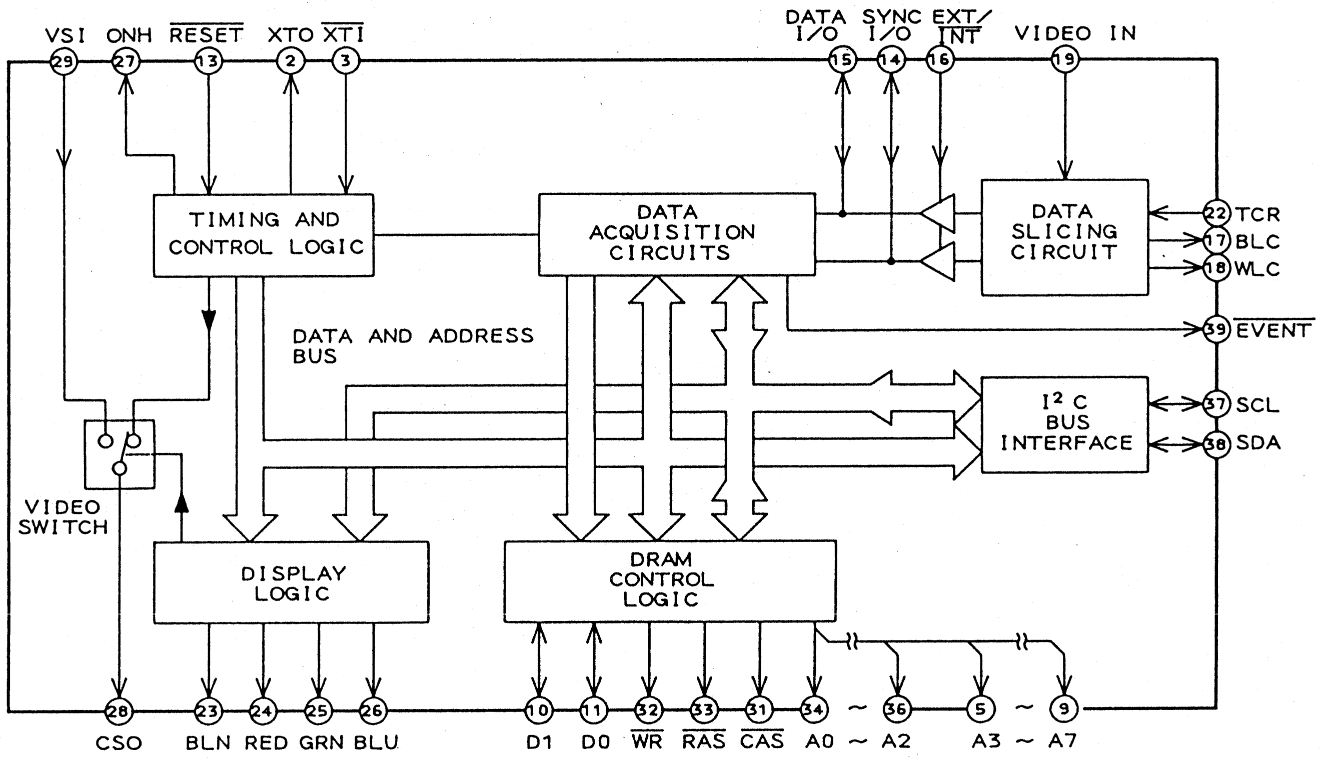
## MM1068XS (SYNC SEPARATOR)



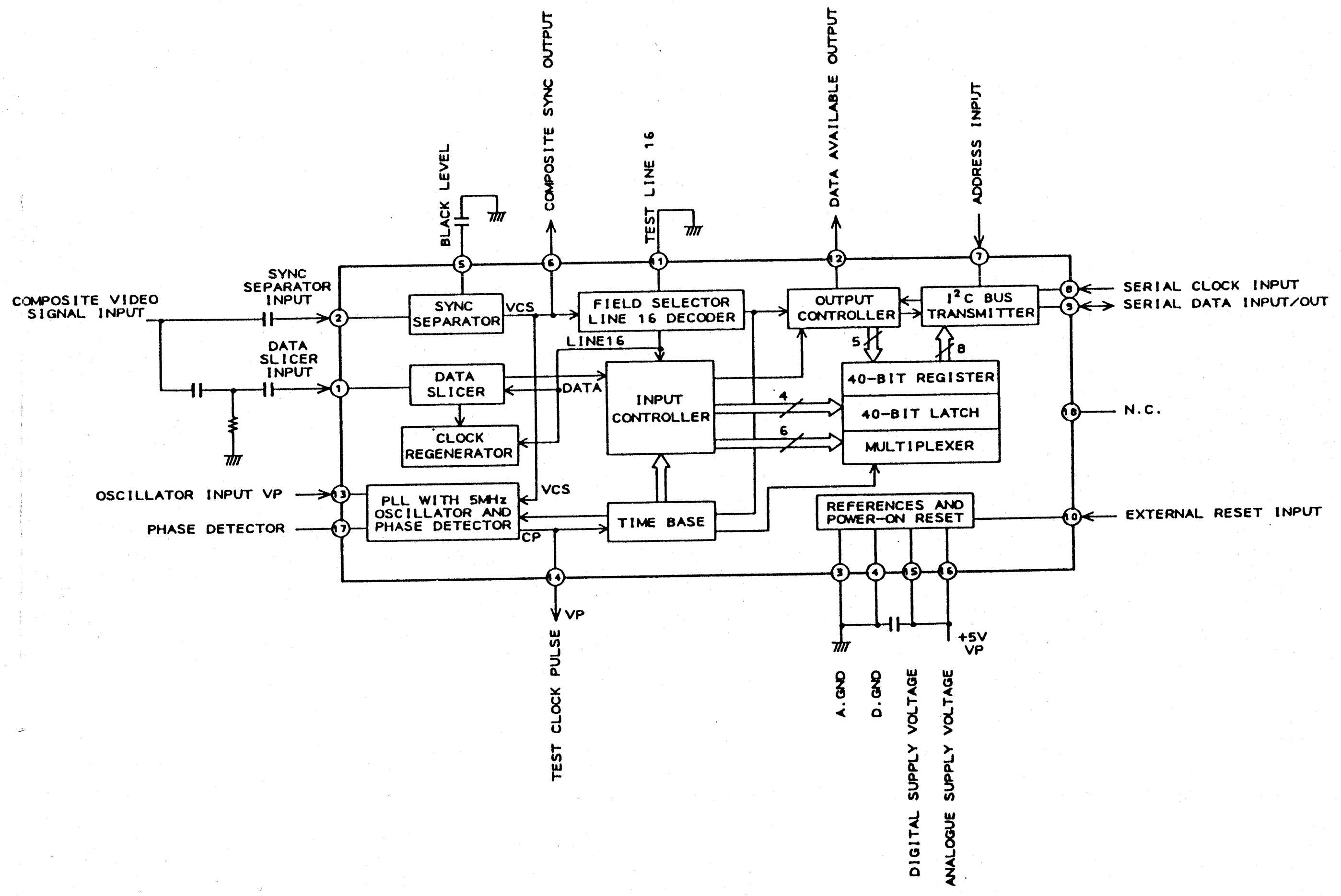
## MN675201A (SERVO/SYSCON MI-COM)


MN675201A
SERVO & SYSCON MI-COM
(PAL)
ANC CONTROL (L.M.H) 1 TUNE
AUDIO EE CONTROL 2 A.EE
REC START CONTROL 3 REC.S
LINEAR AUDIO REC START CONTROL 4 A.REC
COLOR SYSTEM CONVERT FOR NTSC TO PAL 5 NP
YNR/LNC CONTROL PIN (L.M.H) 6 YNR
REC SAFETY SW INPUT 7 REC.SAF
SERIAL DATA OUTPUT 8 SRDY
SUPPLY REEL PULSE INPUT 9 SRP
POSITION SENSOR 4 10 RSW4
POSITION SENSOR 3 11 RSW3
POSITION SENSOR 2 12 RSW2
POSITION SENSOR 1 13 RSW1
LOADING MOTOR REVERSE 14 LM.R
LOADING MOTOR FORWARD 15 LM.F
LOADING MOTOR TORQUE CONTROL 16 TRQUP
SERIAL CLOCK IN 17 SCK
SERIAL DATA IN FROM OPE MI-COM 18 SO (OP) /SI (SYS)
SERIAL DATA OUT TO OPE MI-COM 19 SI (OP) /SO (SYS)
RESET INPUT 20 RESET
TO BE GROUND 21 EXI
22 V.SWP VIDEO HEAD SWITCHING PULSE
23 VP QUASI V SYNC SIGNAL OUTPUT
24 CPD CM PHASE CONTROL OUT (PWM)
25 CFV CM SPEED CONTROL OUT (PWM)
26 DPD DM PHASE CONTROL OUT (PWM)
27 DFV DM SPEED CONTROL OUT (PWM)
28 CM LIM CAPSTAN MOTOR LIMIT CONTROL
29 CM STOP CAPSTAN MOTOR STOP CONTRL
30 CMD CAPSTAN MOTOR GAIN CONTRL
31 OSC2
32 OSC1 MI-COM MASTER CLOCK IN
33 GND TO BE GROUND
34 F/R CAPSTAN MOTOR DIRECTION CONTROL
35 FF UP FF/RWD TORQUE CONTROL WHEN START
36 A.MUTE AUDIO MUTE CONTROL
37 PB PB CONTROL PIN
38 EE EE CONTROL PIN
39 PAL/MESECAM PAL/MESECAM SELECT CONTROL
40 TRICK L WHEN TRICK MODE
41 DM STOP DRUM MOTOR STOP CONTROL
42 AVMM QUASI-V ANALOG MONO MULTI INPUT
PGMM 43 PG MONO MULTI ADJ
FGI 44 AFG SIGNAL INPUT
FGF 45 CAPSTAN FG SIGNAL OUTPUT
AFG 46 CAPSTAN FG SIGNAL INPUT
YFG 47 DRUM FG SIGNAL INPUT
YPG 48 DRUM PG SIGNAL INPUT
AVss 49 GND
VRO 50 SERVO REFERENCE VOLTAGE OUTPUT
VRI 51 SERVO REFERENCE VOLTAGE INPUT
CIR 52 CTL SIGNAL INPUT
CIF 53 CTL CLAMP INPUT
TPZ 54 CAPACITOR CONNECTING TERMINAL FOR TRAPEZOID WAVE
RCTLN 55 CTL SIGNAL OUTPUT
RCTLP 56 CTL SIGNAL I/O
CTLS 57 CTL AMP SW
CTLH 58 CTL SIGNAL INPUT
CTLA 59 CTL AMP AC GND
CTLG 60 GND
AGC 61 CTL AMP AUTO GAIN CONTROL
CO 62 CTL PULSE FROM CTL AMP
AVdd 63 +B
64 VSYN V SYNC INPUT
65 TRP TAKE UP REEL PULSE INPUT
66 S.JUGE NOT USED
67 SD.P SECAM SIGNAL DET INPUT (PAL/SECAM)
68 S.JUGE NOT USED
69 DOC.P NOT USED
70 ENV.DET VIDEO ENVELOPE INPUT
71 ES END SENSOR INPUT
72 SS START SENSOR INPUT
73 PICT PICTURE CONTROL (PWM)
74 Vcc +5V
75 ADSC NOT USED
76 ANC.VOL ANC CONTROL OUT (PWM)
77 CTL.G CTL AMP FREQUENCY RESPONSE SELECT
78 EXT INPUT SELECT CONTROL
79 NTSC NTSC MODE CONTROL OUT
80 SP TAPE SPEED JUDGE OUT
81 V.J VIDEO SIGNAL EXISTENCE JUDGE OUTPUT (H:NO VIDEO)
82 C.ROT SWP OUT WHEN TRICK MODE
83 HASW SP/LP HEAD SELECT CONTROL
84 ENV.SW FROM PRE AMP ENVELOPE COMPARATOR OUT

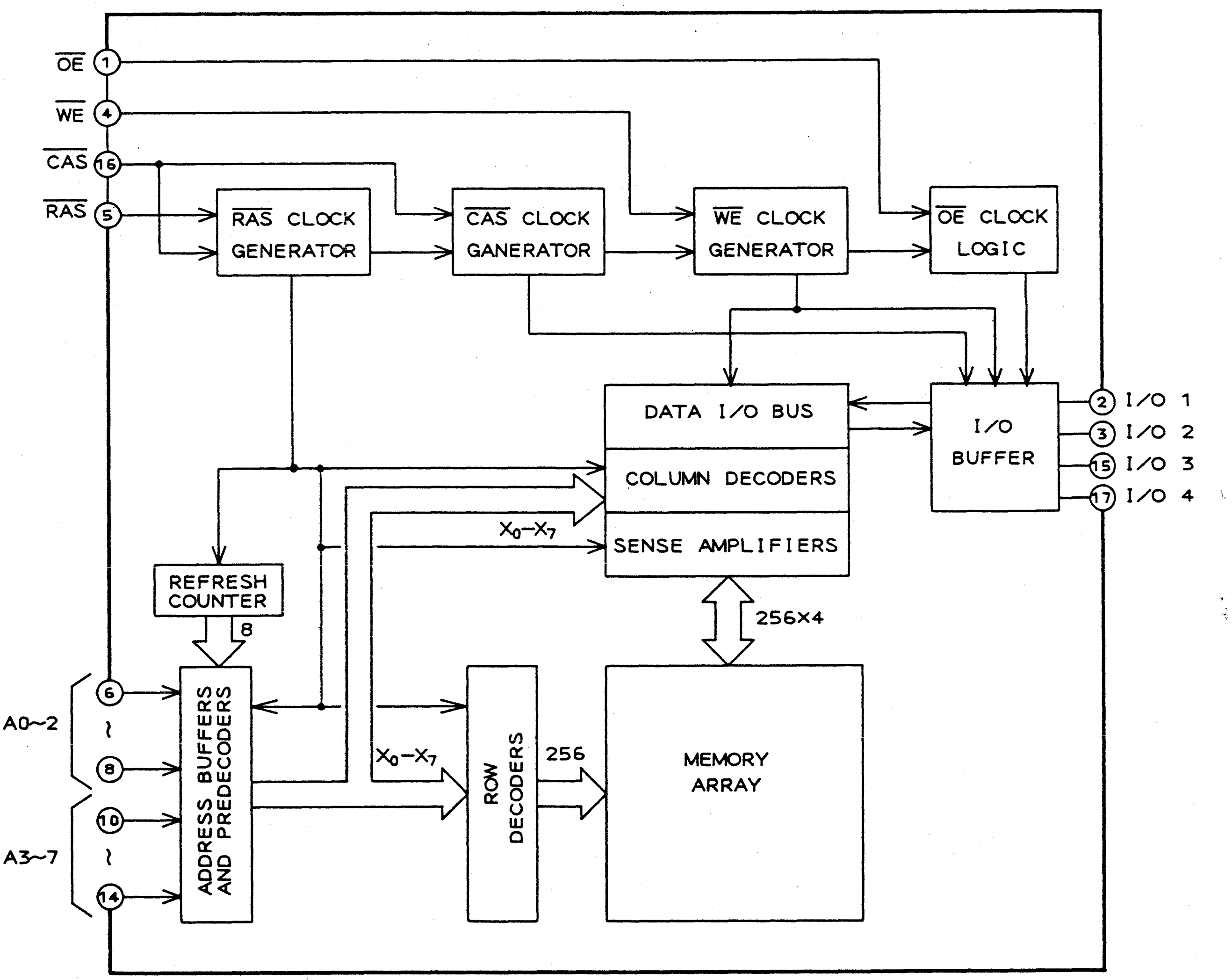
## MV1815 (TELETEXT FOR 625 LINE OPERATION)


VSI 29
ONH 27
RESET 13
XTO 2
XTI 3
DATA I/O 15
SYNC I/O 14
EXT/INT 16
VIDEO IN 19
TIMING AND CONTROL LOGIC
DATA ACQUISITION CIRCUITS
DATA SLICING CIRCUIT
22 TCR
17 BLC
18 WLC
39 EVENT
DATA AND ADDRESS BUS
I²C BUS INTERFACE
37 SCL
38 SDA
VIDEO SWITCH
DISPLAY LOGIC
DRAM CONTROL LOGIC
28 CSO
23 BLN
24 RED
25 GRN
26 BLU
10 D1
11 D0
32 WR
33 RAS
31 CAS
34 A0 ~ 36 A2
5 A3 ~ 9 A7

## SAA4700 (VPS DATA LINE PROCESSOR)

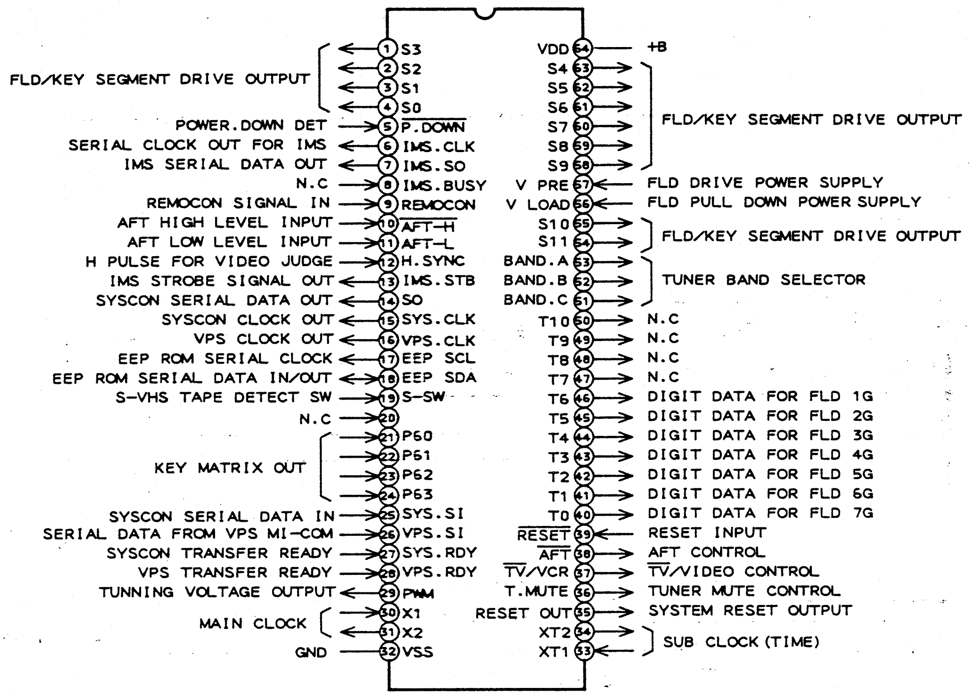

COMPOSITE VIDEO SIGNAL INPUT
SYNC SEPARATOR INPUT 2
DATA SLICER INPUT 1
OSCILLATOR INPUT VP 13
PHASE DETECTOR 17
BLACK LEVEL 5
COMPOSITE SYNC OUTPUT 6
TEST LINE 16 11
DATA AVAILABLE OUTPUT 12
ADDRESS INPUT 7
SERIAL CLOCK INPUT 8
SERIAL DATA INPUT/OUT 9
N.C. 18
EXTERNAL RESET INPUT 10
SYNC SEPARATOR
VCS
FIELD SELECTOR LINE 16 DECODER
LINE16
OUTPUT CONTROLLER
I²C BUS TRANSMITTER
5
8
DATA SLICER
DATA
INPUT CONTROLLER
40-BIT REGISTER
40-BIT LATCH
MULTIPLEXER
4
6
CLOCK REGENERATOR
PLL WITH 5MHz OSCILLATOR AND PHASE DETECTOR
VCS
CP
TIME BASE
REFERENCES AND POWER-ON RESET
14 VP
TEST CLOCK PULSE
3 A.GND
4 D.GND
15 DIGITAL SUPPLY VOLTAGE
16 ANALOGUE SUPPLY VOLTAGE
+5V VP

## V53C464A (64 k x 4 BIT D-RAM)

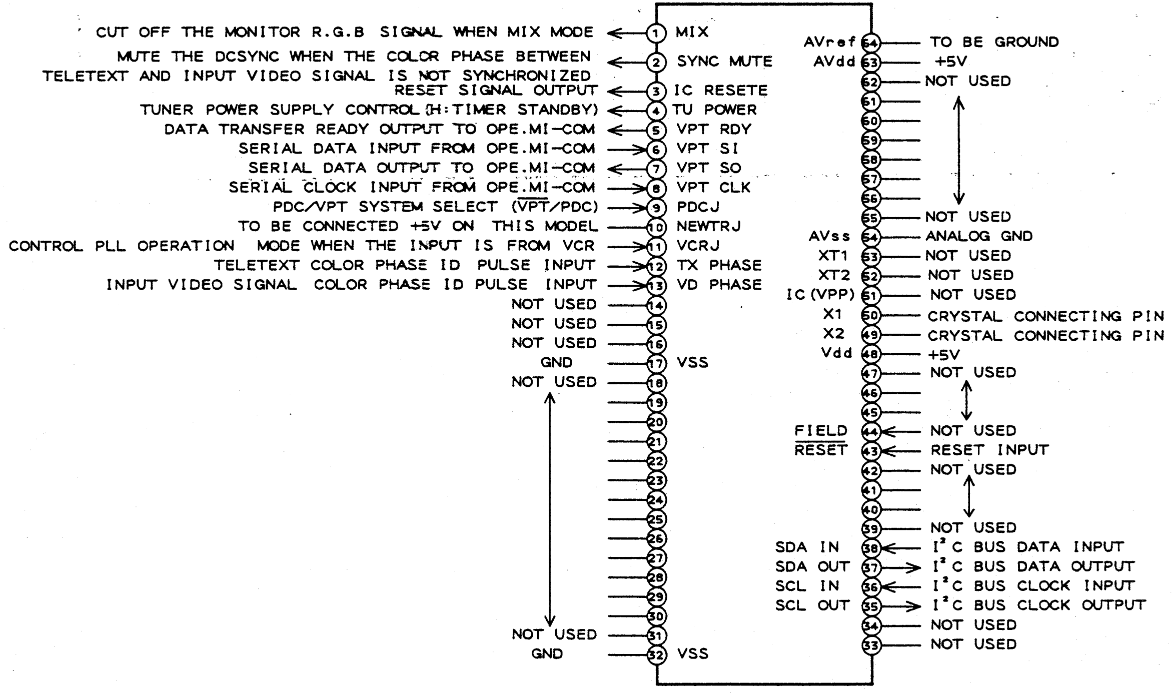


$\overline{OE}$ 1
$\overline{WE}$ 4
$\overline{CAS}$ 16
$\overline{RAS}$ 5
$\overline{RAS}$ CLOCK GENERATOR
$\overline{CAS}$ CLOCK GANERATOR
$\overline{WE}$ CLOCK GENERATOR
$\overline{OE}$ CLOCK LOGIC
DATA I/O BUS
COLUMN DECODERS
SENSE AMPLIFIERS
I/O BUFFER
2 I/O 1
3 I/O 2
15 I/O 3
17 I/O 4
$X_0$–$X_7$
REFRESH COUNTER
8
256×4
A0~2
6
~
8
A3~7
10
~
14
ADDRESS BUFFERS AND PREDECODERS
$X_0$–$X_7$
ROW DECODERS
256
MEMORY ARRAY

## µPD75217CW (OPERATION MI-COM)


FLD/KEY SEGMENT DRIVE OUTPUT
1 S3
2 S2
3 S1
4 S0
POWER.DOWN DET 5 P.DOWN
SERIAL CLOCK OUT FOR IMS 6 IMS.CLK
IMS SERIAL DATA OUT 7 IMS.SO
N.C 8 IMS.BUSY
REMOCON SIGNAL IN 9 REMOCON
AFT HIGH LEVEL INPUT 10 AFT-H
AFT LOW LEVEL INPUT 11 AFT-L
H PULSE FOR VIDEO JUDGE 12 H.SYNC
IMS STROBE SIGNAL OUT 13 IMS.STB
SYSCON SERIAL DATA OUT 14 SO
SYSCON CLOCK OUT 15 SYS.CLK
VPS CLOCK OUT 16 VPS.CLK
EEP ROM SERIAL CLOCK 17 EEP SCL
EEP ROM SERIAL DATA IN/OUT 18 EEP SDA
S-VHS TAPE DETECT SW 19 S-SW
N.C 20
KEY MATRIX OUT
21 P60
22 P61
23 P62
24 P63
SYSCON SERIAL DATA IN 25 SYS.SI
SERIAL DATA FROM VPS MI-COM 26 VPS.SI
SYSCON TRANSFER READY 27 SYS.RDY
VPS TRANSFER READY 28 VPS.RDY
TUNNING VOLTAGE OUTPUT 29 PWM
MAIN CLOCK
30 X1
31 X2
GND 32 VSS
VDD 64 +B
S4 63
S5 62
S6 61
S7 60
S8 59
S9 58
FLD/KEY SEGMENT DRIVE OUTPUT
V PRE 57 FLD DRIVE POWER SUPPLY
V LOAD 56 FLD PULL DOWN POWER SUPPLY
S10 55
S11 54
FLD/KEY SEGMENT DRIVE OUTPUT
BAND.A 53
BAND.B 52
BAND.C 51
TUNER BAND SELECTOR
T10 50 N.C
T9 49 N.C
T8 48 N.C
T7 47 N.C
T6 46 DIGIT DATA FOR FLD 1G
T5 45 DIGIT DATA FOR FLD 2G
T4 44 DIGIT DATA FOR FLD 3G
T3 43 DIGIT DATA FOR FLD 4G
T2 42 DIGIT DATA FOR FLD 5G
T1 41 DIGIT DATA FOR FLD 6G
T0 40 DIGIT DATA FOR FLD 7G
RESET 39 RESET INPUT
AFT 38 AFT CONTROL
TV/VCR 37 TV/VIDEO CONTROL
T.MUTE 36 TUNER MUTE CONTROL
RESET OUT 35 SYSTEM RESET OUTPUT
XT2 34
XT1 33
SUB CLOCK (TIME)

## µPD78014QXVPT1 (VPT/PDC MI-COM)


CUT OFF THE MONITOR R.G.B SIGNAL WHEN MIX MODE 1 MIX
MUTE THE DCSYNC WHEN THE COLOR PHASE BETWEEN TELETEXT AND INPUT VIDEO SIGNAL IS NOT SYNCHRONIZED 2 SYNC MUTE
RESET SIGNAL OUTPUT 3 IC RESETE
TUNER POWER SUPPLY CONTROL (H:TIMER STANDBY) 4 TU POWER
DATA TRANSFER READY OUTPUT TO OPE.MI-COM 5 VPT RDY
SERIAL DATA INPUT FROM OPE.MI-COM 6 VPT SI
SERIAL DATA OUTPUT TO OPE.MI-COM 7 VPT SO
SERIAL CLOCK INPUT FROM OPE.MI-COM 8 VPT CLK
PDC/VPT SYSTEM SELECT (VPT/PDC) 9 PDCJ
TO BE CONNECTED +5V ON THIS MODEL 10 NEWTRJ
CONTROL PLL OPERATION MODE WHEN THE INPUT IS FROM VCR 11 VCRJ
TELETEXT COLOR PHASE ID PULSE INPUT 12 TX PHASE
INPUT VIDEO SIGNAL COLOR PHASE ID PULSE INPUT 13 VD PHASE
NOT USED 14
NOT USED 15
NOT USED 16
GND 17 VSS
NOT USED 18
19
20
21
22
23
24
25
26
27
28
29
30
NOT USED 31
GND 32 VSS
AVref 64 TO BE GROUND
AVdd 63 +5V
62 NOT USED
61
60
59
58
57
56
55 NOT USED
AVss 54 ANALOG GND
XT1 53 NOT USED
XT2 52 NOT USED
IC (VPP) 51 NOT USED
X1 50 CRYSTAL CONNECTING PIN
X2 49 CRYSTAL CONNECTING PIN
Vdd 48 +5V
47 NOT USED
46
45
FIELD 44 NOT USED
RESET 43 RESET INPUT
42 NOT USED
41
40
39 NOT USED
SDA IN 38 I²C BUS DATA INPUT
SDA OUT 37 I²C BUS DATA OUTPUT
SCL IN 36 I²C BUS CLOCK INPUT
SCL OUT 35 I²C BUS CLOCK OUTPUT
34 NOT USED
33 NOT USED